THE
DENTAL DIGEST

Vol. XXXIV MARCH, 1928 No. 3

Impression Technic for Full Lower Dentures That Hold by Direct Mechanical Retention

By Charles I. Stoloff, D.D.S., New York, N. Y.

Full lower dentures that are held in the mouth by direct mechanical retention depend upon posterior extensions for their anchorage (Fig. 1). These auxiliary extensions, sometimes called *posterior wings*, are added to the full lower denture as usually constructed and are adapted to fit over the pretonsillar areas (Fig. 2). The auxiliary extensions hold the

Fig. 1
Lower denture with posterior extensions.

full lower denture in position, due to the undercut resulting from the sloping of the mandible downward and outward from the median line at these places.

The pretonsillar areas are situated on each side of the mandible posterior to the ends of the mylohyoid ridges. They may be seen in any normal mouth when the tongue is drawn aside, appearing as concavities in the mucous membrane, which swings from the pterygo-mandibular ligament to the anterior pillar of the tonsil and the side of the tongue.

Fig. 2
Cross-section showing the pretonsillar area.

Materials Required

Modeling compound (tracing sticks preferably)—for taking the impression.
Carding wax—for finishing the impression.
Soft tray metal—for pretonsillar impression trays.

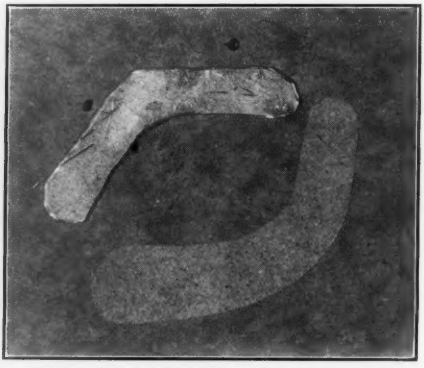


Fig. 3
Tray for taking pretonsillar area impression.

Sheet brass or aluminum—for pretonsillar impression guides and bite guides.

Mouth blowpipe, alcohol lamp or Bunsen burner—for warming and glazing the impression materials.

The pretonsillar tray is made from the soft tray metal, as in Fig. 3. It is so shaped that it can be curved over the buccal, occlusal and lingual surfaces of the posterior ends of the main body of the denture. The lingual portion of the tray should extend posteriorly over the pretonsillar area.

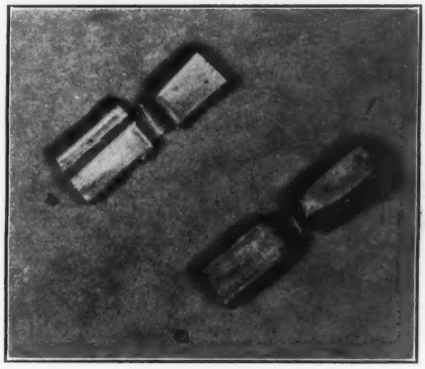


Fig. 4
Brass sheet impression guide.

The pretonsillar impression guides are made from the sheet brass or aluminum, cut in the shape shown in Fig. 4. The guides furnish a definite, unchangeable seat, so that the pretonsillar impression may be removed and replaced as many times as necessary without fear of distorting the main body of the denture. They are incorporated into the main body of the denture by being warmed and sunk into the modeling compound or, if desired, attached to the old denture with compound.

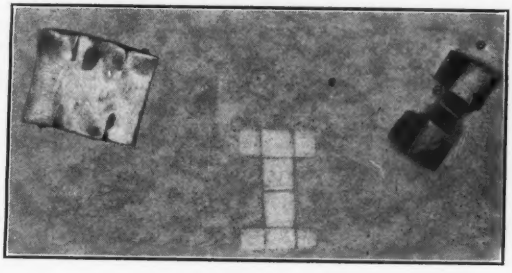


Fig. 5
Brass sheet guides for taking the bite.

The sheet metal bite guides (Fig. 5) are useful accessories in denture construction, furnishing more definite, unchangeable seats than the notches usually cut in the modeling compound. They may be used to advantage in any technic of denture construction when the bite is being taken.

Impression Technic

Auxiliary extensions over the pretonsillar areas may be utilized for retentive purposes by incorporating them into new dentures, and by adding them to full lower dentures that have been worn in the mouth but do not stay in position. In both instances the impression technic is basically the same. From the impression viewpoint this new type of lower denture is regarded as comprised of three component parts, the

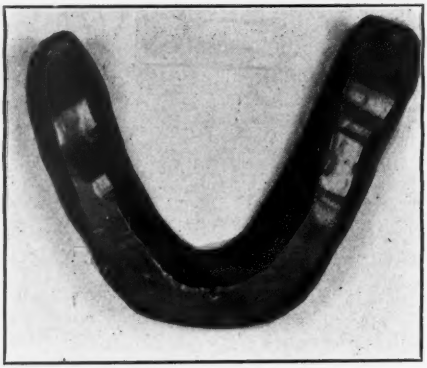


Fig. 6
Muscle-trimmed modeling compound impression.

body of the denture and the two auxiliary extensions. When reference is made to the body of the denture, it will apply to the old denture or to the completed muscle-trimmed modeling compound impression limited by the boundaries of the alveolar ridge area (Fig. 6). The impression for each auxiliary extension is taken individually after the impression of the body of the denture has been completed.

The posterior heels of the body of the denture must be so prepared that these impressions may be readily removed and replaced without the distortion of either the main body or the auxiliary extension. When adding the auxiliary extensions to an old denture, the occlusal markings of the posterior teeth are used for this purpose. On a modeling compound impression the preparation is made by the use of notches or by the incorporation into the compound of the two brass guides that have been described (Fig. 7).

Fig. 7

GUIDE INCORPORATED
IMPRESSION OF RIGHT PRE-TONSILLAR AREA
BODY OF DENTURE WITH IMPRESSION OF LEFT PRE-TONSILLAR AREA ATTACHED

Fig. 8

Denture with impression of pretonsillar area.

After the posterior end of the body of the denture has been lubricated, a preliminary basic impression of the pretonsillar area is taken with softened modeling compound that has been attached to the pretonsillar impression tray. After the preliminary impression has been chilled in the mouth, it is removed and the excess is trimmed away or any deficiency rectified by the addition of more compound. The surface and margins of the impression are glazed with a mouth blowpipe or over a Bunsen flame, dipped in warm water, and then slipped into position in the mouth. The impression is held firmly and the patient is instructed to protrude the tongue just beyond the lower lip. The impression is removed and should present a smooth, muscle-trimmed surface. It may be returned as often as required for necessary adjustments. Any final discrepancy may be rectified with black carding wax. When the impression of the pretonsillar area of one side has been satisfactorily completed, it is firmly attached to the main body of the denture, serving to stabilize the denture while the impression of the other side is being taken (Fig. 8).

The impression of the other side is taken in the same manner as described above. This impression when completed is not attached to the body of the denture, thereby permitting the completed impression to be removed without any distortion of the two component parts. One part is the main body of the denture with the impression of one auxiliary extension attached to it; the second part is the impression of the auxiliary extension of the other side. Outside the mouth the two parts are attached together, the entire impression is enclosed with black carding wax, and a stone model is poured in the usual fashion.

Comments and Conclusions

The impression method that I have described gives accurate reproductions of the pretonsillar areas. These areas overlie the pretonsillar fossae, where divergent undercuts exist, due to the slope of the mandible downward and outward from the sagittal plane. These undercuts exist in normal mouths and may be utilized for direct retention of full lower dentures. The direct anchorage afforded eliminates complete dependence upon such factors as atmospheric pressure and the transient negative force of suction.

The method described is simple. I have shown three new devices, the pretonsillar impression guide, the pretonsillar tray, and the bite guide, that will simplify the technic. If carefully carried out, this impression method permits the construction of a full lower denture

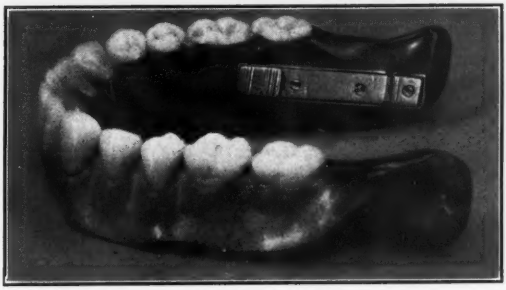


Fig. 9
Lower denture showing lock holding the extension

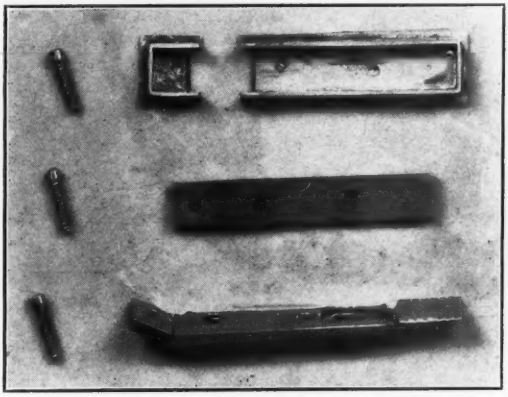


Fig. 10
Details of the lock shown in Fig. 9.

with accurately fitting auxiliary extensions to hold it in place (Figs. 9-10). The positive retention afforded prepares the patient mentally to be more receptive to the initial discomforts of the new denture and shortens the usual period of trials and tribulations with full lower dentures.

665 Fifth Avenue.

The Problem of Calcification, Its Influence on the Tenure of Human Life—How Can We Solve It?*

By Maxwell Lauterman, M.D., Montreal, Canada

Late Professor of Urology and Syphilology, Army Medical School of Canada; Colonel C. A. M. C.

A SUMMARY

Calcium phosphate forms three-quarters of the mineral matter in the body. It gives rigidity to the bones, is a necessary constituent of protoplasm, and is essential to the fermentation of milk and the clotting of the blood.

In contrast with the normal process of calcification there are two pathological processes of calcification which occur in dying or dead tissue, as in the thickening of the arterial walls and in certain tumors. In one of these pathological processes calcium is withdrawn from tissues where it belongs, as in the bones, and is deposited in organs which secrete acid—the lungs, which secrete carbonic acid; the stomach, which secretes hydrochloric acid; and the kidneys, which secrete the acids in the urine.

The second type of pathological calcification is local in character and has nothing to do with the calcium content of the blood or with the reaction of the body tissues. It may occur in degenerating or necrotic tissues or in tuberculous foci. During life the masses resulting from such calcification are not hard as we see them after death, but are soft masses like unset mortar.

The essayist then spoke of the parathyroid glands and their function in the control of calcium metabolism.

He then read a summary of a report by Yoshitimo Fujimaki, upon the feeding of experimental animals upon a deficient diet, which could not help being of interest and importance to the audience, since it detailed the production in these animals of bladder stones, kidney stones and bile-duct stones and the solution of the stones by an altered diet. The report may be summarized as follows:

Fujimaki reports that he fed rats upon a diet deficient in Vitamin A from two days to 376 days. It is assumed, though not definitely stated in the report, that pains were taken to know that the animals had no calculi before feeding began.

At the end of 40 days, some of the animals had bladder stones. After 150 days, 85% showed bladder stones, 75% had kidney stones, 63% had bile-duct stones.

*Summary of an address given before the First District Dental Society, New York, December 5, 1927. The whole address, in authentic form, will be published in *The Journal of Dental Research.*

Of the rats fed from 245 to 376 days, 100% had bladder stones, 83% had both kidney and bile-duct stones.

Some similar experiments with young Chinese mice had very similar results. One of the mice, which lived 295 days, had bladder, kidney and bile-duct stones.

Five albino rats were fed on a diet deficient in Vitamin A and Vitamin C. After 207 days all of them had bladder stones, and four had both kidney and bile-duct stones.

Rats kept on a normal diet, those kept on a diet deficient in Vitamin B, those on a diet deficient in Vitamin C, and those upon a diet deficient in Vitamin E showed no calculi.

Six rats in which bladder stones were present were fed upon a diet rich in Vitamin A and two grams of dried river lamprey. The physiological conditions returned almost immediately to normal. At the end of two months four of the bladder stones in one animal had disappeared. A small stone remained, which presented characteristics that showed that it also was disappearing. At the end of three months three rats were killed, but no calculi were found. Two rats were kept four months and then killed; no calculi were found.

In a comment about the report the essayist said that these were phosphatic calculi, but that they might point the way to the formation of other calculi and suggest a means for their dissolution.

The essayist quoted Dr. Porter of the University of California to show that the viewpoint of physicians everywhere is changing, and that they now desire to prevent disease through periodic examination, school hygiene programs and general hygienic training. He then added, "It should be our ambition to be health engineers and not just repair men. I believe that you of the dental profession realize that in treating teeth you are dealing with only one of the tissues of the body, and that the disability which attracts your attention to that part is only an index of what is going on in other parts of the body and should be so considered."

The milling process removes the vitamins and the mineral salts from cereal foods. These are essential to life.

Dr. Lauterman believes that the metabolist holds the key to the solution of most of our problems through the intelligent control of the diet, and that the solution of the cancer problem lies along such lines. In a personal aside, after the meeting, he added that cancer arises spontaneously only in tissue in an acid condition, and that the preservation of tissue alkalinity is a powerful defense against it.

"The Japanese produce stones in the gall bladder, kidney or bladder by diet and dissolve them by a reversal of the diet. In the majority of cases they could form stones in the particular organ they desired and dissolve them again.

"They also produced gastric ulcers with great precision and could turn them into cancer. You can see what great possibilities these things hold for research in the future. . . .

"Rats are resistant to tuberculosis, and guinea-pigs are very susceptible. Feed rats a Vitamin-A-deficient diet and they become as susceptible to tuberculosis as guinea-pigs. That may or may not have significance in connection with human tuberculosis. . . .

"When I tell you that appendicitis can be avoided, that kidney and gall stones can be removed without operation and their recurrence prevented, believe me I am not dreaming. Pay a lot of attention to men like Deeks, Howe and your own President Herman Chayes and McCollum, who are pioneers each in his own sphere, to whom we owe a greater debt of gratitude than we can ever hope to discharge. Cooperate with us in helping the public, which is so much in need of honest, intelligent help. Realize that instead of the body having resistance to disease the cell has permeability to the influence of cosmic energy; that high blood pressure is a symptom of a disease, but not in itself a disease; and, moreover, that it can be treated with satisfactory results to the patient and the physician as opposed to the undertaker. . . .

"Let me emphasize that milk in its natural and pure state is the most perfect of foods. Rich in calcium, a quart of milk contains more calcium than a quart of lime water; it is rich in Vitamins A, B and C. The last mentioned vitamin is absent in milk in the wintertime, because cows do not get fresh green food. This vitamin is found in fruit and vegetables grown in the open air and is so delicate that fruit and vegetables grown under glass contain a very much smaller quantity of this vitamin."

SUPPLEMENT TO DR. LAUTERMAN'S REMARKS

By William E. Deeks, M.D., New York, N. Y.

General Manager, Medical Department, United Fruit Company

There are a few points in connection with diet to which I should like to draw your attention, as they are not generally appreciated by the public at large. We often hear of the terms *well-balanced* and *unbalanced* diets, but few people indeed realize their significance.

Food is required for the following purposes: growth, restoration of tissue lost through wear and tear, production of heat and energy (muscular and nervous).

We obtain our food from the animal and the vegetable kingdoms, and also from the inorganic world. In order to secure satisfactory growth and maintain health, the food intake in addition to oxygen from the air and water must consist of (a) protein, either from plants or

animals; (b) hydrocarbons or fats; (c) carbohydrates or starches, sugars and cellulose; (d) certain inorganic salts; (e) at least five vitamins.

Proteins consist of amino-acids, eighteen of which are known, bound together in various proportions by chemical linkage, and protein digestion consists in the maceration and hydrolyzing of these combinations. In order to build tissues in the human body, either for growth or for repair, these amino-acids are regrouped and combined with alkaline inorganic salts and water. Proteins when burned have an acid-ash content.

Hydrocarbons or fats can be ingested or burned to the extent of from 3 to 4 ounces a day. They are neutral in chemical reaction and are mainly heat- and energy-producing substances.

The carbohydrates, which consist of starches, sugars and cellulose, for a proper understanding must be subdivided into groups:

(1) Those derived from cereals, which include wheat, oats, barley, rice, corn, etc. This group of food substances and their derivatives contain not only starch but 8% to 16% protein. They have an acid-ash, and the vitamin and inorganic salt contents reside largely in the germ and outer layers of the seed, and they are removed in the milling and refining processes. White flour and polished rice, for example, have practically no vitamins and are deficient in inorganic salts.

(2) Legumes include beans, peas and lentils and contain about the same amount of starches and protein as the cereal grains. They have an alkaline-ash and contain Vitamin B, which is fairly well distributed throughout the seeds. A part of the content, which on analysis gives a protein reaction, consists of pseudo-cellulose, and produces considerable amounts of gaseous products in the intestines, which as far as we know are innocuous.

(3) Root vegetables include potatoes, beets, carrots, onions, parsnips, turnips, etc., and consist mostly of starch with very little protein, although they are also rich in cellulose. They have an alkaline-ash, and most of them contain considerable roughage, which is an essential part of a well-balanced diet. For the most part they have inadequate amounts of vitamins for protection.

(4) Leafy green vegetables, represented by cabbage, celery, spinach, lettuce, endive, etc., contain a small amount of starch and large percentages of water. They are rich in vitamins and alkaline inorganic salts. They also contain considerable cellulose or roughage.

(5) Fruits contain variable amounts of carbohydrates, large quantities of water, and are rich in alkaline inorganic salts and vitamins.

It will be noted that along with animal flesh proteins, which include eggs, oysters, etc., all of which are acid-ash foods, we must group also the cereal grains from the inorganic salt ash standpoint.

Our blood is normally alkaline, and when its alkalinity is lowered

by an excessive acid-ash food intake, acidosis develops. In every well-balanced diet, therefore, into which flesh foods enter, the carbohydrate content must contain a considerable percentage of the alkaline-ash foods. There is a great tendency to take too much of the cereal-derived foods, not only in the form of breakfast cereals but also in the form of bread and other products derived from cereal grains. These foods not only have an acid-ash, but are practically devoid of vitamins and of the inorganic salts necessary to the building of tissue.

From a clinical standpoint we find that focal infections, pyorrhea, tooth decay, Bright's disease, calculi in the kidneys and gall-bladder, high blood pressure, myocardial degenerations, diabetes, etc., are encountered mostly in people who are living on excessive quantities of the acid-ash foods (flesh foods and cereals) and insufficient amounts of ash foods (legumes, root and green vegetables, and fruits), which are also the main sources of vitamins. There are no objections to eating white bread in limited quantities, providing the substances in which it is deficient are obtained in adequate amounts from other sources.

Teeth are modified epithelium; so is hair. When the teeth begin to decay, and premature baldness appears, you may be sure that the same insidious processes responsible for these conditions are affecting other tissues of the body as well though the pathological changes are not so visibly evident as they are in the teeth and the hair.

A well-balanced diet, for an adult, must consist of adequate quantities of animal protein, at least 3 to 4 ounces a day, which means in uncooked meats about five times this quantity; 2 to 3 ounces of fats; and from four to five times as much carbohydrates as protein, but the carbohydrate content must not contain more than 3 to 4 ounces of cereal derived foods. The balance should be in the form of root vegetables, legumes, leafy green vegetables, and fresh fruits. The greatest moderation in the use of artificially sweetened foods and drinks should be exercised.

Appointment

Dr. Milo Hellman, research associate in physical anthropology at the American Museum of Natural History, has been appointed professor of comparative dental morphology at the New York University College of Dentistry.

Complications In and After the Removal of Teeth*

By Henry S. Dunning, D.D.S., New York, N. Y.

A SUMMARY

This paper was written for the general practitioner. It is an old subject, for the removal of teeth is probably the operation more frequently performed than any other. The generalized use of the x-ray has been responsible for the condemnation of many teeth, and in many cases it is following the line of least resistance to tell a patient to have his teeth out, but in spite of all this there are fewer teeth being extracted now than formerly. The essayist believes that teeth should be given a chance, and that an attempt should be made to render them safe. The success of this depends a great deal upon the ability of the operator.

No general practitioner should send a patient to a specialist with orders to remove certain teeth or use a specified anesthetic. This procedure, which is common enough, frequently causes a great deal of embarrassment, for the specialist knows which anesthetic is best suited for the case in hand, and if it is not the one that has already been indicated, then the patient has to be sold all over again. It is unscientific and shows a lack of confidence in the specialist. Fortunately a great deal of it is done through thoughtlessness, but that does not change the results. The specialist, and the specialist alone, knows how he can best perform a certain operation for the best interests of the patient.

No person enjoys an operation, and when one is imminent, he is not normal. Do not enter into details in regard to the work that is to be done, for something may be said that will prove upsetting to the patient. Answer all questions, but try to keep the conversation away from the operation. Everything should be in readiness—the x-rays, case history, instruments, etc.—and the operation should be commenced as soon as possible. It is often reassuring to the patient if the operator tells him that he has just been talking with his dentist. Patients vary and must be handled in different ways—some like to be talked to during the operation, while others do not.

In the choice of an anesthetic the temperament of the patient plays an important part. No one anesthetic is the best for all cases. However, there are certain general rules to follow. A local anesthetic should not be used on a child who will not cooperate. This does not depend on age but on training. The essayist has used novocain on a child of

* Summary of a paper read before the Oral Surgery Section of the First District Dental Society, New York, October 19, 1927.

five and been unable to use it on some who were much older. The child must want to help the operator to help him. In cases where novocain cannot be used on children, ethyl chlorid or ether is better than nitrous oxid, since the patient is put under more quickly and the period of struggling is shortened.

Local anesthesia is contra-indicated where there is severe infection, and in adults the preferable anesthetic is nitrous oxid for short operations and ether for long ones. When ankylosis is present, ether is indicated and the tongue should be manipulated either by forceps or by a ligature.

When a root is fractured, it is generally the apical third that is left in the alveolus. The fracture may be due to the thinness or curvature of the root or the result of pathological processes. If the condition of the patient permits, the root should be removed at the time of fracture, for unless the pathology is eradicated, the operation is a failure, and the diseased condition is generally around the apical third. Also, if the root is not removed, it acts as a plug and an abscess may result. The tissues have been traumatized and nothing of benefit has resulted. It will all have to be gone through again.

Fracture of the alveolar process may be due to the use of too much force, operating with an improper radiogram, misapplied force, or lack of proper view of the field of operation. The tooth must be delivered along the bony canal, and an experienced operator can generally tell by the feel of the tooth in just what direction is the line of least resistance. After the extraction the alveolar plates should be pressed together. A fracture should be splinted or, if it is small and will probably be exfoliated later, it should be removed at once.

Complete fracture into the antrum or through the mandible is extremely rare. This occurs from the use of too much force or because of bone pathology. If this accident happens, the operator is very likely to lose his head and try to avoid the patient. This is a mistake. He should do everything possible to make the patient comfortable and show that he is trying to be of aid in an unpleasant situation. If the patient gets away from him and goes to another man, a lawsuit is the usual result.

Pain is relative, and it is very hard to ascertain the amount that is present, but there is one method of making sure. If it interferes with sleep or work, then something must be done. Bone pain is the worst and every time a tooth is extracted the bone is bruised, but trauma of any kind plus bacteria always causes pain. Consequently pain may always be expected after an oral surgery operation, regardless of the anesthesia used. All the blame cannot be laid to the use of novocain. When there is real pain, whiskey or morphine is the best remedy, with preference given to the former. If a person who is not used to it takes a good stiff drink, he will generally get a good night's sleep. Aspirin

is of no use unless taken in large quantities, from 40 to 60 grains a day, but alcohol often helps the action of drugs.

Claims are frequently made against dentists that they introduced infection when extracting teeth. Now the majority of teeth that are extracted are non-vital and the majority of non-vital teeth are infected. It is due only to the wonderful resistance of the mouth that there are no more postoperative infections. The old idea that a tooth should not be extracted until after an abscess has subsided is wrong and has caused a great deal of needless suffering. As a rule, drainage is not established soon enough.

An injury to the mandibular nerve will generally repair itself in time, varying from a few weeks to a year. The essayist knows of only a few cases where a return to the normal has not occurred. This accident is generally caused by the dentist's being in too much of a hurry, and the canal is interfered with by the root of the tooth as it is rotated.

Dislodgment of roots into the antrum is generally due to pathology of the floor of the antrum or to the use of too much force. If the dentist remains cool and calmly makes a large opening through the anterior wall of the antrum, they may easily be removed.

[ONE VIEW OF SPECIALIZATION]

It is impossible, mentally and physically, for the dentist to have a complete working knowledge of all branches of dentistry; neither can he give, in full measure, the variety and quality of service that is demanded in this age. The public is willing to pay for superior service, and the dentist must be prepared to give a commensurate service. The relationship of dentistry to general health is assuming such a commanding position that no part of the science can be neglected or underestimated.

—HOFFMAN.

The Rise and Fall of Oral Hygiene in Bridgeport

By George Wood Clapp, D.D.S., New York, N. Y.

THIRD ARTICLE

PREPARATIONS FOR THE DEMONSTRATION IN THE SCHOOLS

Now that the money was available for the demonstration in the schools under the auspices of the Board of Health, new aspects of the problem presented for immediate attention. Dr. Fones desired to make a demonstration covering five years to afford unassailable statistics as to the value of oral hygiene. For such a broad plan the amount of money was very small.

In spite of the fact that the money had been so tied up in the Board of Education that it could not be used during 1913, and that there was no certainty that it would be released there or reappropriated so that it could be used under other auspices, Dr. Fones had gone ahead with preparations for an organization to do the work in the schools by completing the outline of a very comprehensive course of instruction and securing a group of brilliant teachers.

So intensive and extensive had been the newspaper campaigns in behalf of oral hygiene by the dentists who were interested, by other contributors and by the editorial writers that Dr. Fones anticipated no difficulty in recruiting enough young women who might want to become hygienists to meet all his requirements. But the uncertainty as to the money made it impossible to assure any young women who might take the instruction that there would be positions available in the schools after graduation. When the opportunity of taking the instruction was presented to the graduating class in the high school and to one or two other groups, not one person responded. Here was a new dilemma. Where should he get his raw material?

Of course, the work which he had been doing in his own practice and the lectures and clinics which he had given had informed many dentists in his vicinity as to the desirability of oral hygiene for patients and dentists. So he addressed a communication to dentists whom he knew to be interested, telling them that he was about to institute a course in oral hygiene, and that it would include instruction by teachers of very high standing and enough practical work so that when a girl graduated from the course she would have a good knowledge of the fundamentals and should be ready to work for patients. In the offices of quite a number of these dentists there were young women suitable for such training. The dentists must have enthused these girls with the possibilities, because about twenty-five of them enrolled. There

GRADUATES OF THE FIRST CLASS OF DENTAL HYGIENISTS, NOVEMBER, 1913—JUNE, 1914

From left to right: *Top row*—Misses Hazel Lockwood, Florence Harris, Louise Borchardt, Mary Russell, Rose House, A. K. Moores, Mrs. Hubert Hart, Miss Mary Harrington, Mrs. J. L. Loftus, Miss Louise Rich. *Middle row*—Misses Gladys Reilly, Louise Birdsall, Maude Hugo, Mrs. A. C. Fones, Dr. A. C. Fones, Mrs. Irene Newman, Misses Edmere Champagne, Madeline Sinclair, Edna Lassen. *Seated*—Misses Maude Sullivan, Enid Cortright, Flora Harlow, Carolyn Frederick, Rena Hubbell, Mrs. T. A. Ganung, Misses Blanche Darling, Ruby Guilbert, Clara Harris.

were also three college graduates who were teaching school, three trained nurses, and the wives of three practising dentists. Twenty-seven of them creditably completed the course and were given diplomas.

Whenever the story of the development of the oral hygienist is told, great credit is properly given to Dr. Fones because without him she would not have been. But no little credit is due to some of these girls for the efforts which they made to avail themselves of the instruction. Take, for instance, the cases of Miss Bessie Proctor, who commuted three times each week from New York, and of Miss Louise Birdsall, who commuted from Hartford. Hartford and New York are almost equally distant from Bridgeport, about 55 miles, and the time required on fast trains each way is an hour and a half. All the lecture courses were given from eight to nine-thirty in the evening on Monday, Wednesday and Friday of each week from the middle of November to the end of March. A thirty-minute quiz preceded each lecture.

Beginning on April 6th and lasting for six weeks, there was a practical course on five afternoons and evenings of each week, and each student was required to attend at least three two-hour sessions each week. That meant for these girls part of a day in the office, an hour and a half on the train on the way to the class, an evening of quiz and instruction or practical work, and an hour and a half on the train homeward bound. That program from early November to the first of June is calculated to take a strong physique. Talk about the weaker sex! Miss Borchardt and Miss Rich commuted from Waterbury, Miss Harrington and Mrs. Loftus from Meriden, and others from Stamford and New Haven. Miss Sarah Stewart came from Newport, R. I., but did not commute.

An excellent lecture room had been made ready with desks, baloptiicon and screen, and so, on November 13, 1913, there assembled at 10 Washington Avenue, Bridgeport, the first class in dental hygiene whose members were not prospective nor graduate dentists.

The program for the course was carefully laid out, furnished in printed form and exactly followed. The great amount of thought which Dr. Fones had given to the training of this class is shown by the comprehensive list of subjects which were taught and the names of the men who taught them. There are few dentists today who would not profit by attending such a course as the following fifty lectures:

Anatomy, 5 lectures, by Raymond C. Osburn, Ph.D., Columbia University.

Special Anatomy of the Head, Teeth and Jaws; and *Dental Histology,* 5 lectures, by R. H. W. Strang, M.D., D.D.S., Bridgeport, Conn.

Physiology, 6 lectures, by Alexander M. Prince, M.D., Yale University.

Bacteriology and Sterilization, 4 lectures, by L. F. Rettger, Ph.D., Yale University.

The Skin in Health and Disease, 2 lectures, by George M. MacKee, M.D., College of Physicians and Surgeons, New York.

The Chemistry of Food and Nutrition, 2 lectures, by Russell H. Chittenden, Ph.D., L.L.D., Sc.D., Yale University.

Posture and Fresh Air, 1 lecture, by Prof. Irving Fisher, Yale University, Chairman of Committee of One Hundred on National Hygiene.

Factors in Personal Hygiene, 1 lecture, by C. Ward Crampton, M.D., Director of Physical Training, Public Schools, New York.

Lengthening the Life of the Resistive Forces of the Body, 1 lecture, by Dr. William G. Anderson, Director, Yale University Gymnasium.

Oral Secretions, 1 lecture; *Deposits and Accretions of the Teeth,* 1 lecture; *The Psychology of Handling Children,* 1 lecture, by Edward C. Kirk, Sc.D., D.D.S., Dean, School of Dentistry, University of Pennsylvania.

Dental Caries, 2 lectures, by Eugene H. Smith, D.M.D., Dean, Dental Department, Harvard University.

Alveolar Abscess, 3 lectures, by M. L. Rhein, M.D., D.D.S., New York.

Pyorrhea Alveolaris, 2 lectures, by R. G. Hutchinson, Jr., D.D.S., New York.

Malocclusion, 2 lectures, by R. Ottolengui, M.D.S., New York, Editor, *Items of Interest.*

The Teeth as a Masticating Machine, 2 lectures, by Charles R. Turner, M.D., D.D.S., Professor of Mechanical Dentistry and Metallurgy, School of Dentistry, University of Pennsylvania.

The Dental Hygienist as an Assistant in Oral Surgery, 1 lecture, by M. I. Schamberg, M.D., D.D.S., New York.

The Dental Hygienist as an Assistant in General Practice, 1 lecture, by Herman E. S. Chayes, D.D.S., New York.

The Teaching of Mouth Hygiene to School Children, 1 lecture, by Thaddeus P. Hyatt, D.D.S., New York.

Dental Prophylaxis, 6 lectures, by Alfred C. Fones, D.D.S., Bridgeport, Conn.

The more one reflects on the list given here, the more one perceives it to be remarkable in character. It is perhaps not astonishing that far-seeing men in our profession like Kirk, Hyatt, Turner and the others should have given of their time and energy to instruct a group of girls in their special subjects, because oral hygiene had been "in the air" for a long time and some of the advantages likely to result from their services were quite well developed in some of the more alert minds in the profession. But that men like Osburn, Prince, Rettger, Chittenden, Fisher and Anderson, not dentists by profession, busy with affairs which they might properly consider more important, should go to Bridgeport to teach thirty-three young women is astonishing. And the longer one thinks about them and what they did, the more astonishing it becomes.

When such men as these step out of the regular routine of their lives to do unusual things, it is because some one has implanted an unusual idea in their minds and convinced them that it is worth their attention and effort. It is not difficult, in this case, to surmise who implanted the idea and applied the persuasion. Dr. Fones went to them personally, not once only but several times. He laughingly tells now how he had almost to sit on some of their doorsteps in order to win them to his point of view. But finally they all saw it. When he made out his program, it must have been no small satisfaction to him to know that nowhere in the world could a finer corps of teachers for that course have been assembled. These teachers served without pay. Dr. Fones paid their expenses in order that the fund available for the demonstration might be made as effective as possible.

How did he win such men to such efforts with him? He gave them many new conceptions, somewhat as follows:

Something of his own vision of the threat which oral conditions as they generally existed were to the health of individuals and, through the sum of all individuals, to the community.

The hopelessness of correcting these conditions by repairs after serious damage was done.

The revolution in his own practice after the establishment of "control" of patients.

His belief that if oral hygiene could be established for very young children in such way as to carry its principles into the homes and could be maintained during adolescence, dental and oral disease would be nearly abolished and there would be a higher average of resistance to infectious diseases.

His observation that dentists generally were unable to educate the parents in their communities to bring children to them for such care and to persist in good home care.

An explanation why dentists could not personally do the necessary amount of prophylactic work without abandoning forms of service for which there was great need.

The story of the almost universal need of the school children in Bridgeport for prophylactic dentistry, of the appropriation that had been made for a demonstration in the schools, of his plan for training young women as hygienists, and of the great need that the man to whom he was talking should come to Bridgeport and help train them as they should be trained.

The fact that there was then no textbook suitable for the training of hygienists, that the instruction to be given would be suitable for such a book, and that the instruction given would be published in book form. This promise was kept. The first edition is out of print, but a second edition, edited by Dr. Fones, was published under the same title—*Mouth Hygiene*. In 1927 a third edition was published. The book is still a standard textbook in training schools for dental hygienists.

I was not present at any of those interviews, and I know of no eyewitnesses. But I imagine that Fones placed on each man a sense of the responsibility for the proper instruction of the class and the welfare of the thousands of children in Bridgeport who needed its services. He is naturally one of the most retiring of men, but he was now a missionary for a great cause, to which he had already contributed much and was to contribute much more. And more than once that possessing strength of conviction has made modest men into great leaders.

Dr. Fones's offices occupy a building strategically located in the city of Bridgeport, and here, on November 17, 1913, the lectures began. All were illustrated with pictures, slides, etc., in a balopticon. When the time for practical work came the following April, the balopticon and the screen were left for use in this work, and sixteen modern dental chairs*, with attachments of work tables and cuspidors, were installed. An electric drop-light was hung over each chair.

Manikins, for first practice, were purchased and attached to the chairs in place of headrests. In the center of the room a large sink was built, with running hot and cold water, and with zinc table large enough to accommodate a tub of boiling water for sterilizing instruments when the practical work should be reached. Upon the sink were also cans of powdered pumice and trays for alcohol to be used for

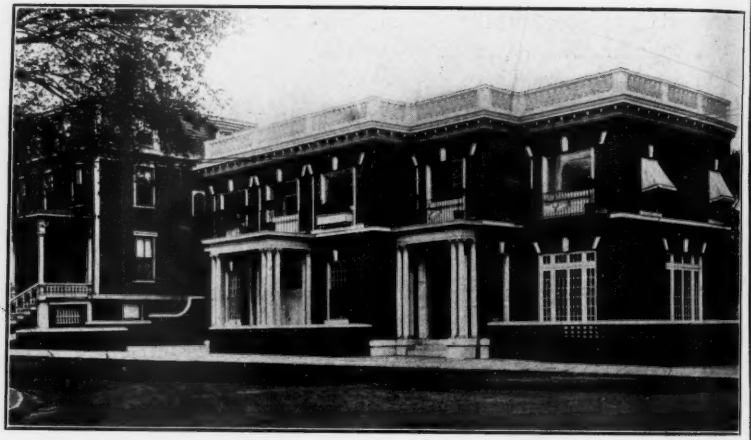
* Loaned, gratis, by The S. S. White Dental Manufacturing Company.

sterilizing mirrors and handles of instruments that would not stand boiling water.

Each student was provided with a japanned box fitted with lock and key in which to keep her own instruments, which were furnished at cost.

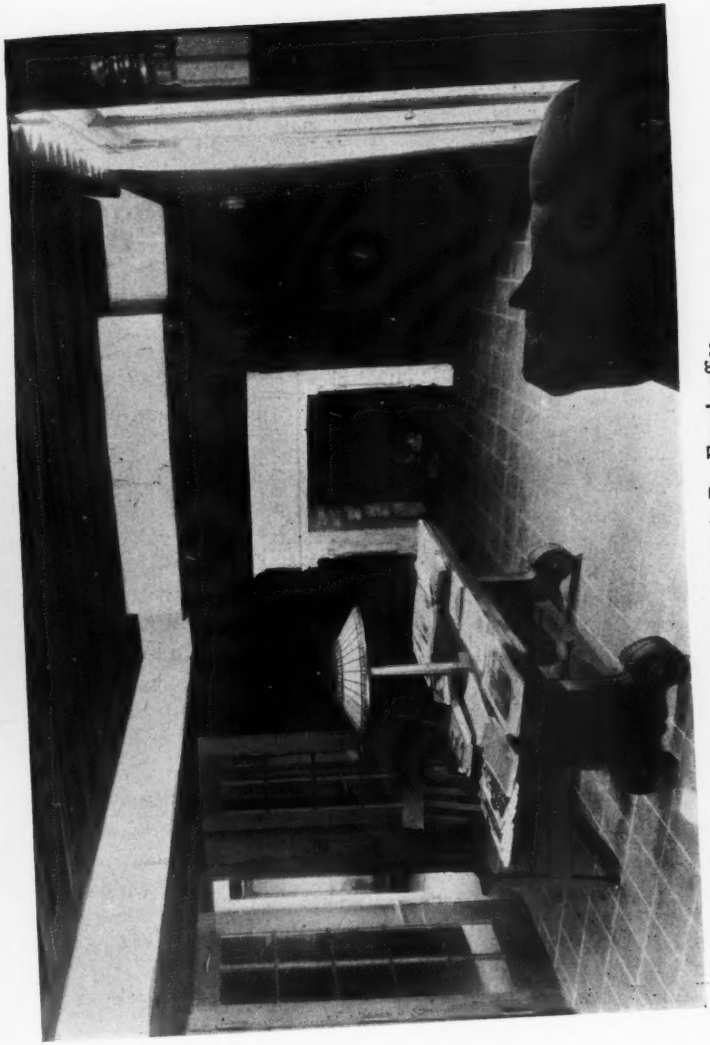
Here each student was put to work for two weeks upon a manikin with rubber cheeks, tongue, two full sets of teeth and movable jaws. In this way the pupil learned to handle the instruments and the patient. Mrs. T. A. Ganung, one of the students, gave the following description of this part of the training in *The Dental Cosmos* for 1915:

"The pupils were taught a system of going over the teeth with instruments and porte-polishers, the correct position of holding instru-



Dr. Fones's office, 10 Washington Avenue, Bridgeport, Conn. Dr. Ottolengui once described this as the finest dental office in the world. It still ranks with the very best.

ments, the best fulcrum points, and the sequence of the teeth to be cleaned. For first practice, the manikin teeth were thoroughly pencil-marked, which gave the pupil practice in polishing with an orange-wood stick. For the next exercise, the teeth were covered with plaster deposits, which were to be removed, so as to give the pupil instrument practice. Each pupil had to pass an examination in every stage of the work. The next step consisted in cleaning children's teeth. The class cleaned between seven and eight hundred children's teeth, each child receiving thorough instructions as to brushing, and demonstrating with his brush that he had understood the instructions given. When the children brought no brushes with them, Dr. Fones furnished them therewith.



Reception room in Dr. Fones's office.

"Some very amusing and some rather pathetic incidents occurred. One day a boy presented his appointment card, and it proved to be dated for the day before. When asked about this, he replied, 'Well, I'm not Billy Jones, but Billy didn't have to give up his ticket yesterday, and we thought I might get my teeth cleaned on it too.' Needless to say, his teeth were cleaned. I asked one of my little patients one day if he had his toothbrush with him, whereupon he produced from his pocket a rather hard-looking brush, well worn and far from clean. I started giving him instructions in brushing, while his brush was soaking. Conscience apparently bothered him, for he finally stammered, 'Eh! That isn't *my* brush; it's my uncle's, but he lets me use it.' He was then given a brush for his exclusive use upon the promise that he would keep it as his own property. In practically every case the children were anxious to learn to care for their mouths, and we hope that we drilled them sufficiently in brushing so that at least a large percentage of them will be greatly benefited.

"The practical work was finished by cleaning adults' mouths, and many advanced cases of tartar deposits, pyorrhea alveolaris, etc., were found.

"In this training the pupils were taught to attempt nothing beyond prophylactic treatment, *i.e.*, cleaning, but these cleanings are to be most thorough, not a hasty running over the teeth with a rubber cup in the engine, but a thorough removal of all tartar and stains by careful instrumentation, followed by a thorough polishing of the tooth surfaces, labially, buccally, lingually, above and below the gum margin, with an orange-wood stick dipped in fine powdered pumice and hydrogen dioxid, taking care to reach the approximal surfaces, then using dental floss dipped in pumice for reaching approximal surfaces difficult of access, and finishing up the grooves and fissures of the occlusal surface with the bristle brush in the engine.

"After finishing a prophylactic treatment, improper conditions, such as poor crown and bridgework, pyorrhea conditions, and suspicious points where trouble might arise, are to be carefully noted, and all such cases are to be reported to the principal for his attention. The Fones pupils hope and expect that by conscientiously following the principles of their training they will be of good service to both the dentist and mankind generally."

Before the class completed the course Dr. Fones's optimism had been justified. In April the money was reappropriated to the Board of Health, which was prepared to adopt the Fones plan, and the way was opened. When this happened, most of the young ladies in the class had already taken positions in offices. This made it impossible to employ

a sufficient number of them for the work in the schools. It was therefore decided to employ two members of the class as supervisors and recruit and train new hygienists for the school work. At the close of the class work Mrs. Hubert Hart and Miss Rose House were chosen as supervisors.

Eight hygienists were needed, and it was felt that there should be two alternates. Ten young ladies about to graduate from the Bridgeport High school were interested in careers as hygienists and, in spite of the heat of the summer, were given an intensive course of training in theory and practice. This intensive course was merely their introduction to dental hygiene, for in 1915 they were required to take additional training.

In order to make the work possible with the funds available, the supervisors accepted salaries of $900.00 per year each, and the school hygienists worked for a weekly wage of nine dollars.

And so, when the schools opened in September, the personnel was ready for the first demonstration of the value of oral hygiene on a community scale that the world had ever seen.

(The Fourth Article will outline the general plan of the work in the schools, the manner in which cooperation with the school authorities was established, and the degree of appreciation encountered among parents of the children who were served.)

[BETTER EDUCATION NEEDED]

Every day, dentistry assumes more and more of a medical and scientific character. I take it for granted that the highest possible standard of education is none too good for the members of the dental profession, and it seems to me today that the average dentist is seriously lacking in matters that should be of common knowledge to everyone who attempts to treat the sick.

—THORNTON.

Special Teeth for Cross-Bite Cases

By Alfred Gysi, D.D.S., Zurich, Switzerland
Professor of Prosthetic Dentistry, University of Zurich
(Literary Collaboration by George Wood Clapp, D.D.S.)

EIGHTH ARTICLE—(Continued)

ELEMENTS OF THE PRINCIPLES OF CROSS-BITE FORM

(Continued)

Facet Names Reviewed

As was explained in the *Seventh Article*, the occlusal surface of each cross-bite molar presents three facets, with the exception of the mandibular first molar, which has four facets. In the course of the different mandibular movements each facet discharges more than one function, but for purpose of identification in study each facet has been given a name derived from what may be regarded as its principal function. These names are now to be used as part of an elementary description as to how these facets are formed, and how they interact. Preceding this description there should be a few words in review of the character of certain mandibular movements and the limitations which these movements impose upon the facets.

Mandibular Movements Inclined in Space

An understanding of the extreme lateral movements of the mandible may be more easily had if it is remembered that these movements are not horizontal, as this page will be when laid upon the table, but are inclined at an average inclination of about 30° to the occlusal plane, as this book may be inclined to the floor when the reader holds it in his hand. A rough idea of the character of these movements may be gained by holding the book inclined at about that angle, thrusting a pencil perpendicularly against an upper right or left corner of this page, and moving the book to the right and left about the pencil as a center. As long as the page is thus inclined and the pencil is perpendicular to it, it forms a very good representation of the inclination of the protrusive facets of the teeth, with the pencil as the side-bite axis about which these facets also must function. A more accurate presentation of the variations in these movements ordinarily met may be obtained by holding a pencil at the rotation areas shown in Fig. 60 (same as Fig. 57).

Limitations of the Facets

Fig. 61 shows a Bonwill triangle on which three basic locations have been recorded, that of the incisor point and that of the second molar on each side. The location of the incisor point is at the anterior

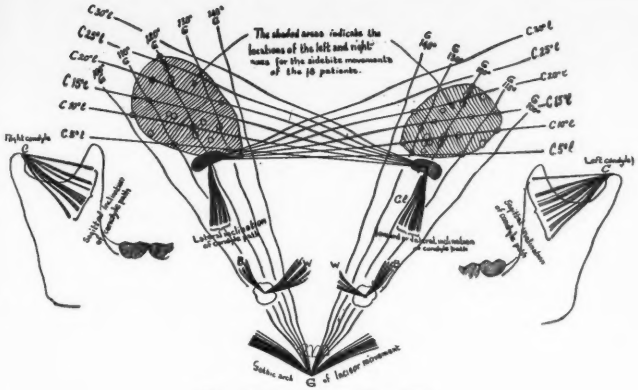


Fig. 60 (same as Fig. 57)

The shaded areas behind the condyles contain the locations of the rotation axis, at this plane, for each of eighteen patients from a dental clinic at the University of Zurich. The lines drawn forward from the condyles and outward and backward from the molars and incisor points indicate the movements at these locations from these axes.

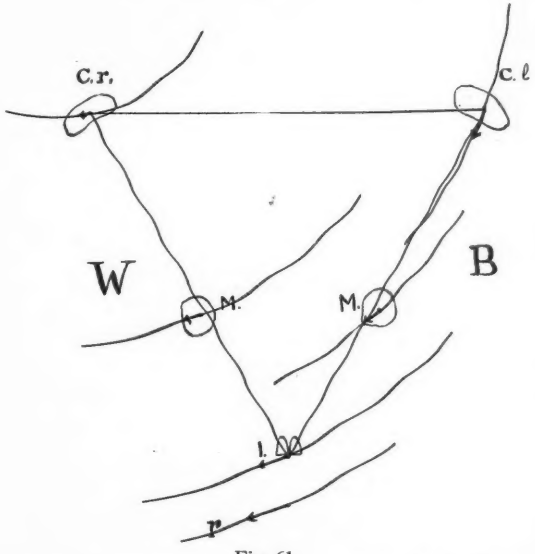


Fig. 61

C.r.—Right condyle.
C.l.—Left condyle.
W—Working side.
B—Balancing side.
M—Molar.
I—Incisor point.

The shaded lines from the incisor point, the molars and the condyles are one-half of the Gothic arches which will be traced at those points when the mandible is moved to the right and in contact with the opposing teeth. The movement of the mandible to the other side will complete the tracing of the Gothic arches, which differ in form but are concentric.

point of the triangle. The locations of the second molars may be determined by any of several generally accepted methods. The mesiolingual cusp of the maxillary second molar rests in the fossa of the mandibular second molar here located.

When the mandible is moved from a position of central occlusion to the extreme right or left, the cusp of the maxillary molar traces on the mandibular molar one-half of a Gothic arch, which is shown by the heavy lines on the molars in Fig. 61, these having been made as the mandible moved to the left. When the mandible is moved to the right

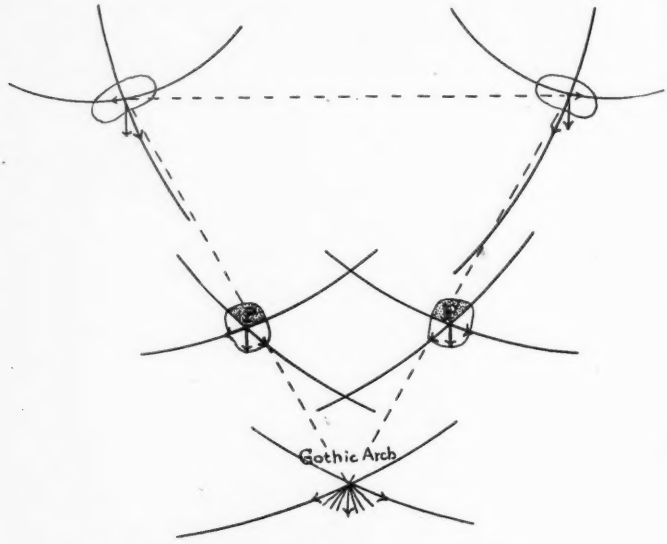


Fig. 62

This illustration is shown for the purpose of calling attention to the shaded area in each molar posterior to the completed Gothic arch. This area (P) forms the protrusive facet of each lower cross-bite molar.

also to complete the Gothic arch, and the lines forming the sides of the arch are prolonged backward, the area posterior to the arch and included between the prolongations of the lines constitutes the protrusive facet on each tooth, which is inclined from the Gothic arch upward and backward, so that it faces forward. The shaded portions of the molars in Fig. 62 represent these protrusive facets.

Protrusive Facets on Artificial Teeth

In the perfect natural dentures from the mountainous regions previously mentioned there have been worn on the teeth facets which keep

the dentures in balance during straight protrusive movements with the teeth in contact, as well as in all intermediate movements. Such balance is very rare in natural dentures in communities where cooking is less primitive and more soft food is used. It is highly desirable that facets similar to those worn in the perfect natural dentures by the protrusive movements should be placed upon artificial teeth, not only to keep artificial dentures in place during mastication but to make easy-running intermediate movements possible, since upon the latter, in the main, mastication depends. To the facets which establish balance during straight protrusive movements has been given the name *protrusive facets,* as has already been stated. They face forward in the mandibular teeth and backward in the maxillary teeth.

The Function of the Protrusive Facets in Extreme Lateral Movements

The extreme lateral movements may be divided for purposes of study into two classes, those on the working side, where the greatest force is being exercised in masticating food, and those on the balancing side, where the dentures are being supported against the working bite, and where a smaller force is being exercised in the final comminution of the food.*

When the mandible moves downward and admits food between the tooth rows and the teeth come into contact in the working bite on the right side, for instance, the contact will be between the protrusive and retrusive facets, the balancing facets being out of contact. As the teeth approximate contact, they squeeze out from between them those portions of the food which are sufficiently soft and hold the portions which are too fibrous to be forced out in that manner. As the mandible returns to central occlusion, the portions of food held between the balancing facets on the maxillary teeth and those on the mandibular teeth will be squeezed in the same manner. The mastication of the more fibrous parts of the food is dependent upon the sliding contact between the protrusive and retrusive facets.

When the mandibular teeth come into contact with the maxillary teeth in working bite on the right side, as just mentioned, the mandibular teeth on the left side will be a little in advance of the position of central occlusion, as well as to the right of it. The protrusive facets on the mandibular bicuspids and molars on the left side will then be in contact with the protrusive facets on the maxillary teeth. The balancing facets on the left side will be sufficiently closely interdigitated to confine the food on all sides except one, as illustrated in Fig. 63.

*See *Studies on the Leverage Problem of the Mandible,* by Alfred Gysi, *The Dental Digest,* 1921.

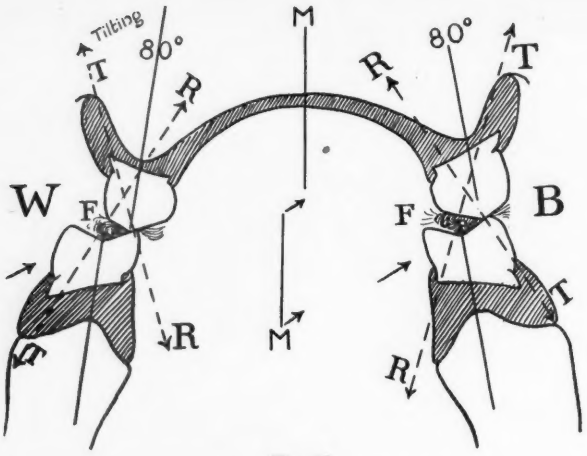


Fig. 63

In studying this diagram it must be borne in mind that the working bite is indicated by W, which is really the right side of the patient's mouth. The bolus of food on each side is indicated by F, the tilting force by T, and the retaining force by R. The tilting force is not active in cross-bite molars, because it does not fall outside the buccal walls of the dentures.

The diagram in the center (M-M) indicates that the mandible has moved downward, to the right, and upward into contact with the maxillary teeth and is now about to complete the fourth phase of its excursion. During this phase the food will be fairly well held for crushing during primary mastication on the working side and during secondary mastication on the balancing side (B), but has an easy way of escape in one direction on each side. An easy escape for crushed food is quite as important as confinement of food still to be crushed.

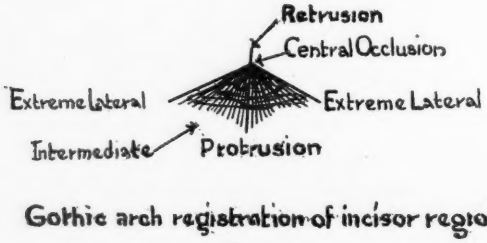


Fig. 64

If the horseshoe plate be put upon the maxillary occlusion rim and the incisor path marker on the mandibular occlusion rim, the pattern traced by the incisor path marker will be like that shown here. The limits of lateral movement will be shown by the boundary lines, protrusively by a straight line forward and retrusively by a straight line backward. Between these extremes of movement there may be more numerous, more varied, and more indefinite paths. These will be the record of the intermediate movements, which of course are very much more numerous and perhaps more useful than the extreme movements.

The Functions of the Protrusive Facets in Intermediate Movements

The intermediate movements of the mandible include all the movements except the straight opening and closing, the straight forward and back, and the extreme lateral. They are much more frequently performed than the extreme movements and are very important in mastication.

Fig. 64 shows a Gothic arch as it is actually traced by the mandibular incisor point. This must not be confused with the diagrams of this movement which are made when the horseshoe plate is on the mandible and the incisor path marker is on the maxilla, since that tracing is "reversed" and is just the opposite of that received by the first-named arrangement. The sides of the arch are traced by the extreme right and left movements. The straight protrusive movement shows as a line in the sagittal plane.

The Retrusive and the Balancing Facets

By a series of computations too complicated to be given here, the inclinations of the retrusive facets are determined in such way that when the teeth come together in direct closing action, the forward pressure on the protrusive facets will be equalled by the backward pressure on the retrusive facets and the dentures will not be shifted. When the retrusive facets have been inclined at the proper angle, they automatically define the margins between the retrusive and the balancing facets.

The inclination of the balancing facets results from the cylindrical motion of the mandible around the rotation axis.

Inclinations of the facets in properly formed artificial teeth are therefore not a matter of whim or pleasure on the part of the man who produces them. They must result from an intimate knowledge of the movements of the mandible and the correct reproduction of those movements in an articulator. Given such knowledge and such an articulator, the inclinations of the protrusive facets are determined by sliding the mandible along the incisor-condyle plane. The inclination of the balancing facets must be a series of arcs described by the cylindrical movement of the mandible around the side-bite axis.

The names which have been taken to describe the inclinations of the facets are justified by the fact that every intermediate movement of which the mandible is capable involves the protrusive facets of both dentures. Artificial dentures can be kept in place and the maximum efficiency developed only when these facets are inclined in harmony with the principles governing the movements of the mandible.

For the carving of the cross-bite teeth I selected a Gothic arch of about 130° at the incisor point, because few Gothic arches have a greater included angle, and teeth produced with this Gothic arch as a guide will be found satisfactory for every patient who has a Gothic arch of less than 130°. Patients who are capable of tracing a Gothic arch of more than 130° quickly learn to refrain from extreme lateral movements under the guidance of tooth and muscle tactile sense, and by refraining from extreme lateral movements they find these teeth satisfactory in their intermediate movements. Any dentist may satisfy himself of this by placing the two points of a pair of dividers over the central fossae of the two molars in Fig. 62 and then moving this figure in all kinds of lateral, protrusive and intermediate masticatory movements within the range of the Gothic arch. It will be seen that all

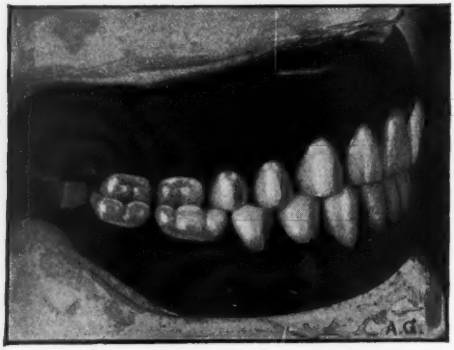


Fig. 65
Cross-bite posteriors in central occlusion.

such movements fall within the limits of the protrusive facets (P) of these two cross-bite molars. Of course, the same thing will happen also on the protrusive facets of the other molars and bicuspids.

In cases of great resorption of the alveolar ridges the use of the cross-bite molars will not overcome all difficulties. In order to stabilize the dentures in the mouth, the depth of the overbite of the maxillary incisors and canines must be reduced. For this purpose it is necessary to reduce the sagittal inclination of the incisor guide incline.

When using the non-adjustable form of the articulator, the effect just referred to may be obtained by softening some modeling compound with dry heat, placing it upon the incisor guide incline, laying a flat piece of metal upon the compound while it is soft and warm, and pressing the metal down in such way that it inclines upward and backward not more than 5° or 10°. After this the incisor guide pivot should be shortened accordingly.

Porcelain Manipulation

A Practical Technic for the General Practitioner

By F. R. Felcher, D.D.S., Chicago, Ill.

XII

The Platinum Matrix

In order that some means may be had of holding the porcelain to a definite shape or form while it is being built up or fused, the use of some kind of matrix is necessary. Earlier operators used a thin gauge of pure gold in inlay cavities for the matrix and a low-fusing porcelain, which was fused on the matrix. Higher-fusing porcelains having fusing points in excess of the fusing point of gold require a higher-fusing metal for matrix purposes, and the best material for this is platinum. For matrices in porcelain jacket crown construction a foil .001 inch is used. Platinum for this purpose must be pure and annealed to a condition known as *dead soft.*

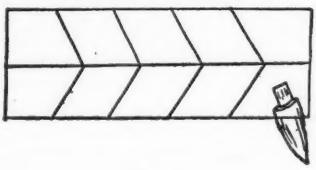


Fig. 34

Fig. 35

Fig. 34
The cuts made in the platinum strip.

Fig. 35
First step in making the matrix.

Possibly the best method of matrix-making is by the burnishing method, employing what is known as the tinner's joint for locking purposes and swaging the matrix over the die just before the porcelain is applied. By this method fewer wrinkles will be found and no solder will be needed for "tacking". The only disadvantage is an excessive thickness at the seam, especially at the shoulder, which can be eliminated by grinding the seam at the shoulder to one thickness after the matrix is finished. The seam should not be placed in direct line of occlusion, but should be brought to the side away from occlusion.

Platinum foil for matrix purposes is purchased in strip form, usually being supplied in a piece 1¼ inches wide and 3¾ inches long,

weighing usually about one pennyweight to the strip. When properly cut, from seven to ten matrices may be made from a pennyweight strip.

The platinum is first cut in halves lengthwise (Fig. 34). Lay the die with the labial portion against one piece of the platinum so that when folded the complete coronal portion of the die will be covered by the platinum, leaving a reasonable amount of excess to cover the shoulder and to allow for the seam. Cut this platinum from the strip. When opened, the piece from which the matrix is to be made will present a diamond-shaped appearance (Fig. 35).

Now place the die in its position as originally cut, with the labial surface against the platinum; hold tight to prevent slipping and fold the platinum over the die toward the lingual (Fig. 36). Burnish with a soft wooden peg or a small brush handle, or with the fingers if pre-

Fig. 36
The platinum folded over the die.

Fig. 37
The matrix opened.

Fig. 38

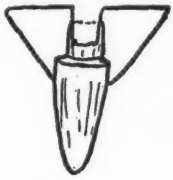


Fig. 39

Fig. 38
The excess cut off.

Fig. 39
The slits cut in the matrix.

ferred, until the general outline of the shoulder presents itself completely around the die.

Place the finger on the labial surface of the die and the platinum. Open the platinum matrix, being sure that the relative positions of the die and the matrix are not interfered with (Fig. 37). Cut the tip from the top of the platinum, leaving enough to cover the incisal, if anterior matrices are to be made, and the occlusal, if posteriors, making sure that the material will extend a bit on the lingual surface as well (Fig. 38). This is done for the elimination of bulk platinum at the occlusal surfaces, which, if allowed to remain, would subsequently be filled with cement and possibly leave a weak portion in the crown, as well as to maintain the matrix as close to .001 inch as possible.

Next cut two slits directly in line with the mesial and the distal surfaces of the die, these slits to extend only to the incisal surface of the die (Fig. 39). Fold this flap over the die toward and over the lingual surface, burnishing carefully, and then with the matrix pliers bring

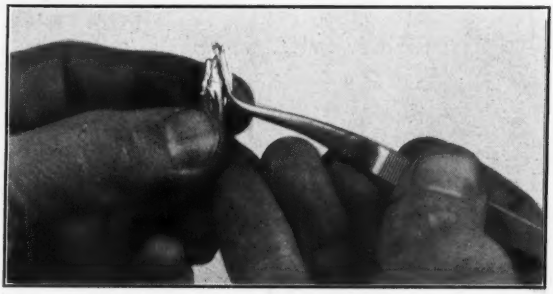


Fig. 40
The two ends of the matrix brought together with the matrix pliers.

Fig. 41
The appearance of the matrix after the seam is first folded.

the two ends of the flaps together (Fig. 40). Cut away enough of the excess to make two folds of the seam approximately the width of the matrix pliers. Remove the matrix from the die and cut away the excess from the shoulder, making sure that when finished the matrix will have the required two millimeters of apron. It is usually advisable to leave the seam portion a little longer at this time to allow for folding over the shoulder.

The matrix is now replaced, burnished, and then, by means of the matrix pliers, the two ends at what is to be the seam are folded once so as to make the "first turn of the tinner's joint." Be sure that this fold does not lie over the matrix itself, but that it is folded. It will at this time stand straight out (Fig. 41). Again burnish carefully from the

Fig. 42
The tinner's joint completed.

Fig. 43
Removing the excess platinum at the linguo-incisal edge.

labial toward the lingual; then with a very slight pull, in order to tighten, fold the matrix seam so that it lies flat on the lingual. This is usually folded in the same direction as the first fold (Fig. 42).

The burnishing is continued, especially at the shoulder. The spatula designed by the author has at one end a round burnisher, which is ideal for burnishing the shoulder. It will be noticed that an extension of the flap extends beyond the incisal. This is now cut semi-circular, but not beyond the end of the flap. This will eliminate a thickness at the occlusal points and also prevent a thin labial wall of porcelain, which in some cases may show as a line after the cementation of the jacket crown (Fig. 43). Reburnish the matrix completely, as shown in Fig. 44.

It is always advisable to swage the matrix after burnishing. This is done by setting in a swager, which has a conical portion in the upper

Fig. 44
The method of burnishing with the dull side of the carver blade.

Fig. 45
Burnishing the shoulder with the carver.

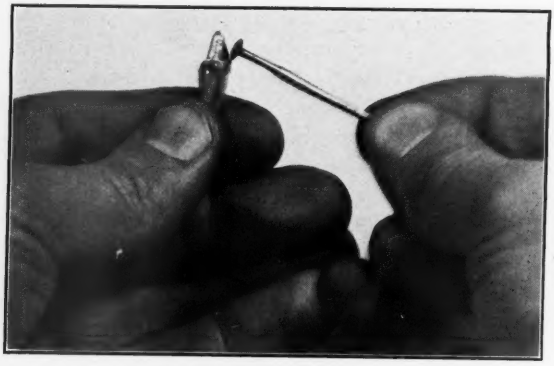


Fig. 46
Removing the excess at the shoulder.

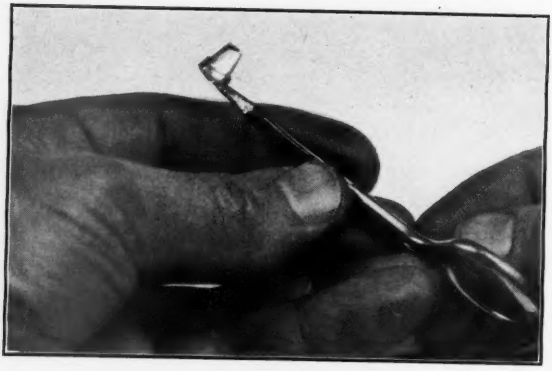


Fig. 47
Trimming the apron to sufficient length.

part, preventing the die from striking the top of the swager and precluding the possibility of breaking the die. Only a light tap is needed. Then burnish the shoulder to prevent possible wrinkles (Fig. 45).

The thickness at the shoulder should next be taken care of. There is a thickness which, if not removed, must necessarily be filled with cement when the crown is set, and which may be washed out in time, leaving an opening at that point. A small mounted stone in the handpiece of the engine should be used here to grind away the excess thickness. Be sure to grind only at the shoulder portion of the matrix (Fig. 46).

Remove the matrix from the die and cut the apron to sufficient length, trimming it so that it will stand when placed on a flat surface (Fig. 47). If difficulty is encountered in removing the matrix, melt a little sticky wax on it and remove in that way rather than by forcing it, as the latter method may destroy the matrix. The wax may be removed by placing over a Bunsen burner.

7616 Phillips Avenue.

(To be continued)

[ELIMINATE FOREIGN BODIES]

When a patient has a cough, however slight, following a dental procedure, it seems advisable for the welfare of the patient as well as for the interests of the dentist concerned to determine whether the cough is etiologically connected with the procedure or is purely intercurrent. Most often, the latter will be the case; but neglect of investigation on this assumption would expose the dentist to liability, morally and financially.

—JACKSON.

Reminiscences—Mostly Anesthetic

By William Harper DeFord, D.D.S., M.D., Des Moines, Iowa

THIRD ARTICLE

As stated in the *Second Article,* the lectures at the Baltimore College of Dental Surgery were discontinued about the first week in March, but the Infirmary remained open the entire year, and those students who could make it convenient to do so had the privilege of operating all day until the regular course resumed in October.

I chose to remain and to matriculate at the College of Physicians and Surgeons, along with my roommate, John Miller, of Flushing, N. Y., and B. Holly Smith, of Baltimore. We attended medical lectures from eight in the morning until 1:00 P. M., then rushed back to the dental college and operated until about four forty-five, then back to the medical school again for lectures from five to seven o'clock, and, as I happened to be able to take down lectures in shorthand, we three retired to my room, where we spent the remainder of the evening until midnight reviewing the lectures of the day. This routine we followed until the first week in October, when we resumed our studies at the Baltimore College of Dental Surgery until March.

In the meantime, something happened to our faculty. Maryland University established a dental college, and our dean, Dr. F. J. S. Gorgas, was appointed dean of that school. Dr. Richard B. Winder, a member of our faculty, was made dean of the Baltimore College of Dental Surgery, and Dr. B. Holly Smith chief demonstrator. I have never known a man with a stronger personality than Dr. Winder, and I want to say a few words about him, for he was a genius and, as a teacher, had no superior.

Dr. Winder owned and lived on a large plantation on the eastern shore of Virginia, located at the tip end of Maryland, with the Atlantic Ocean and Chesapeake Bay surrounding it on three sides. He was a graduate of Princeton University and of an Eastern medical school. He had his own race course, race horses, fine dogs, and his own yacht and sailboats. His hobby was the making of fine furniture. When he was not horse-racing, hunting or fishing, he was busy in his cabinet shop making furniture of every kind, and his large Colonial residence was entirely furnished with the most beautiful and artistic designs, fashioned and carved by himself.

The War of 1861-1865 came on. Dr. Winder cast his lot with the Confederacy, and many of the older dental practitioners will recall his activities as a soldier. When the war ended, Dr. Winder returned to his home to find that it had been confiscated. He had used his large fortune to advance the interests of the Confederacy, and, with his

home and money gone, what was he to do? He borrowed fifty dollars from a neighbor and took the boat to Baltimore "to hunt a job." He walked the streets of Baltimore for three or four days wondering what he could do, since he was now fifty-four years of age. He noticed a number of dental signs about the city, and although he had never seen a set of artificial teeth in his life and knew not the least thing about dentistry, he argued that it involved mechanical procedures and, recognizing that he had mechanical skill and ability, he made some investigations and decided that he would study dentistry. Some one referred him to Dr. F. J. S. Gorgas, who was dean of the Baltimore College of Dental Surgery at that time. Dr. Gorgas heard his story, took him into his laboratory, showed him an upper and lower plaster model mounted on an articulator, turned to some cuts of artificial teeth in Harris's *Principles and Practice of Dentistry,* laid out an upper and lower set of gum-section teeth, and told him to go to it. Dr. Gorgas went back into his operating room and in about three hours returned to the laboratory to find Dr. Winder sitting in a chair with his feet on the laboratory bench smoking a cigar. We older men well know what it meant to articulate those old gum sections and at the same time keep the rubber from coming out between the joints and showing an ugly black line. Dr. Gorgas said he had never seen a better articulation or more skillful grinding of gum-section teeth, and he immediately matriculated Dr. Winder as a dental student. Two years after graduating, Dr. Winder organized the Maryland College of Dental Surgery. The third year the Maryland College of Dental Surgery had more students than the Baltimore College of Dental Surgery, and later the two colleges merged under the name of the Baltimore College of Dental Surgery.

Dr. Winder was a great anatomist and a great teacher. On one occasion the United States Government employed him to examine a thousand Indian skulls, classify them and label them according to the tribe to which they belonged. He had his office at his large residence on Park Avenue, Baltimore. This house was so commodious that he could comfortably accommodate ten students. Those students who were selected as inmates of his home were indeed fortunate, because they enjoyed privileges rarely if ever afforded any other body of students anywhere. It was my good fortune to be one of the lucky ten. Dr. Winder, like Socrates of old, believed in a close personal relationship with those whom he instructed. There was scarcely an evening that he did not call us together for a lecture of some kind pertaining to dentistry or come to our room for a several hours' chat or quiz. Two or three time a week about twelve o'clock at night he would call one of us students downstairs from our rooms and say, "Come and let's take a walk," and for an hour or two he would go over his lecture for

the next day. This was his way of preparing his work. Whenever anything of unusual interest occurred in his operating room, he would not only tell us about it but show it to us. He had a laboratory in his back yard separated from his office. This was presided over by Drs. Ned and Ben Flannigan, who came to the laboratory each evening about seven o'clock. They did Dr. Winder's laboratory work as well as their own and also assisted us with whatever we had on hand of our college work, thus giving us more time at the Infirmary for operative work on our patients. It was never safe to go to bed before two o'clock in the morning. Just as sure as any one took a chance, he would be the very student who was summoned to take one of those "midnight walks," and we all knew better than not to be ready to respond *instanter*.

From October to March again, as a senior dental student, I attended all the dental lectures and operated in the Infirmary each afternoon, spending much time in the extracting room.

We were taught from the lecture platform that anesthesia could be induced by rapid breathing. I had never seen this method demonstrated and was somewhat skeptical in regard to it, but one day I had an opportunity to try it. A large powerful negro presented for tooth extraction, saying that he wanted to "take gas." The previous patient had consumed all the nitrous oxid available for that day. I went out to the Infirmary and invited to the extracting room a half-dozen students who were operating there and told them what I was going to do, and that I might need their assistance. They too were anxious to see anesthesia induced by the rapid-breathing method.

The gas cylinder being empty, I detached the rubber tube from the gasometer and laid it on the floor, placing the inhaler over the patient's nose and mouth as usual, and instructed him how I wished him to breathe. He certainly did some deep breathing, and at what I thought was the proper time the tooth was removed painlessly. It took some little time to reestablish normal breathing, but as soon as he was able to talk he said: "I sure did have a great time! I never felt a thing and I never want a tooth taken out any other way. That gas is sure great stuff!"

March soon rolled around again, and I received my dental diploma. The next day I started in again at the College of Physicians and Surgeons for fifteen consecutive months, attending lectures and clinics from eight until one o'clock and from five until seven.

There were five hundred students of medicine in my class. It had become noised about among the students that I was greatly interested in nitrous oxid gas and the extraction of teeth under nitrous oxid anesthesia. In those days dentists were scarce and many good-sized towns had no dentist, so physicians did a thriving business extracting teeth. Many of these medical students asked me to conduct an extract-

ing clinic at the Medical College, as they desired to learn to extract. Since the hours from one until five were open each afternoon, I asked them to take the matter up with the dean of the College, and, if the faculty wanted such a clinic and would equip a room for me, I said I would devote three afternoons a week to it. The room was equipped, and it was surprising how much interest these medical students showed in this clinic, which was probably the first and only clinic of its kind ever offered the students of a medical school.

15 Rawson Block.

(To be continued)

[A DIGNIFYING RESPONSIBILITY]

No recent contribution has done more to dignify the position of the dentist, or to increase his responsibility, than the theory of focal infection. However grateful he may be for the former, the added burden of this increased responsibility for health conditions remote from the mouth is not a welcome one. But if the validity of this theory is accepted to any degree at all, he must accept this added burden with all its consequences, or give up the practice of his profession.

—HATTON.

Oral Surgery In Practice

By James L. Zemsky, D.D.S., New York, N. Y.
Attending Surgeon, Department of Oral Surgery; Chief of Clinic and Director, Surgical Periodontia Department, Midtown Hospital, New York

(*Continued from February*)

DISEASES OF THE SALIVARY GLANDS AND THEIR DUCTS

¶219. Swellings in the submaxillary and parotid regions are sometimes due to the distention of the salivary glands caused by the retained saliva as a result of the obstruction of the ducts. (See Figs. 212-217.)

¶220. Calculi in the salivary glands or their ducts not infrequently arrest the flow of saliva. Their presence may be determined by passing a probe into the duct, which, when calculi are present, meets with a resistance characterized by a peculiar "grating."

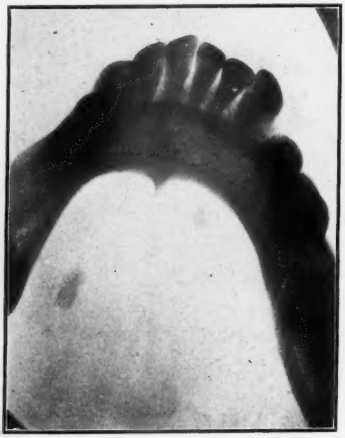


Fig. 212

Fig. 213

Fig. 212

Roentgenogram of a patient, 27 years old, taken in an intra-oral horizontal position. It reveals the presence of salivary calculi, one in each of Wharton's ducts. (See ¶219.)

Fig. 213

Roentgenogram showing a large stone in Wharton's duct. (See ¶219.)

Fig. 214

Photograph of the stone which was removed from the case shown on the roentgenogram in Fig. 213.

Fig. 215

Photograph of the fragments which were removed from an obstructed Stenson's duct. (See ¶219.)

Fig. 216

Roentgenogram showing the stones pictured in Fig. 215 before they were removed from the duct. (See ¶219.)

Fig. 217

Roentgenogram of the mandible of a patient who presented a swelling of the submaxillary gland, revealing the presence of a salivary calculus within the gland. (See ¶219.) (By courtesy of M. Lentz, D.D.S., Passaic, N. J.)

¶221. An enlargement of the swellings in the parotid or submaxillary regions during meals is a pathognomonic symptom of an obstruction of the salivary duct. (See Figs. 218-219.)

Fig. 218

Fig. 219

Fig. 218

A patient, 23 years old, presented a swelling of the left submaxillary gland. He had observed that during meals the swelling enlarged markedly. This suggested that there was an obstruction of Wharton's duct. Upon probing, a hard body was felt within the duct. A roentgenogram of the floor of the mouth disclosed the condition shown in Fig. 219. (See ¶221.)

Fig. 219

Roentgenogram of the patient shown in Fig. 218 revealing the presence of a foreign body in the floor of the mouth. From clinical and radiographic examinations a diagnosis of a calculus in Wharton's duct was made. (See ¶221.)

¶222. Infection of the salivary glands often occurs through their ducts, by means of which the infecting bacteria from the mouth enter the glands. In such cases the probes may be readily introduced into the ducts and upon their withdrawal pus may appear at the orifice. Such cases can be treated by irrigating the duct with a saline solution. Marked swellings with fluctuation require incision and drainage.

¶223. Small salivary calculi may sometimes be "milked out" from the duct after it has been transversely cut.

¶224. Stones of the salivary ducts deeply situated will require "splitting" of the duct. This may be accomplished by inserting a probe into the duct and then making an incision. If possible, the probe here may be placed by a grooved director.

¶225. The salivary glands sometimes present swellings which are due to presence of various tumors. Nearly all varieties of neoplasm have been observed in connection with these structures. The diagnosis of tumors is not easy.

¶226. Surgical interference in a case presenting swellings of the parotid and sometimes other salivary glands due to "mumps" is absolutely contra-indicated. These conditions usually clear up in a few weeks.

[IN OTHER WORDS—"COMMON SENSE"]

The decision as to whether a tooth should be retained or extracted should be determined by the skill and ability of the operator to cope with the technical difficulties involved, the importance of the tooth as a part of the masticating machine or as a means of retention for artificial substitutes, the probabilities of a successful outcome, as far as thorough sterilization and filling of the canals and treatment of the apical complications are concerned, and also by the systemic condition of the patient.

—McGEHEE.

Togo's "Discursions"

Mr. Editor of Delightful Dental Magazine of Monthly Occurrence

Hon. Sir:

Distressing condition now existing in somewhat free land of U. S. A. requires ventilation and adjustment if possible.

During recently elapsed years various communities have placed dentists, trained nurses or other etc. in charge of general health and other systemic features of children in grade schools. Request to "open please" when responded to by average child of six to eight years usually reveals condition of tooth decay in several deciduous molars and frequently disaster of same nature is in one or several first permanent molars also. On discovery of conditions as suggested Hon. School Dentist or Nurse transmits tender missive to supposedly interested and intelligent Parent which conveys information similar to following:

"Johnny Hopeful is guilty of several cavities which afflict teeth to distressing extent. Please take necessary steps to have same placed in suitable condition resembling health as soon as possible.

(Signed) I. SEEUM,
School Dentist."

Occurrence of dental decay at tender ages is distressing affliction, Mr. Editor, all too common in modern civilization; however, when existing, early detection and correction is of superior importance and employment of school officers to do so is tremendous advance and should result in great benefit to child so affected; but does it? Answer is: Only partially and in greatly disappointing degree owing to following condition which was in Oriental brains when arduous task of letter composition for March distribution was thoughtfully undertaken. When Hon. Parents of Johnny Hopeful emerge with letter from school dentist in office of Family ditto said family tooth fixer frequently emits loud snort of disgust including possibly language similar to following. "Supposing little Johnny does contain assorted cavities in baby teeth!" "You should worry!" "Nature will remove all baby teeth, including cavities if present, in three to five years." "Why spend money where total loss will occur presently?" "Hon. School Dentist must discover frequent disasters in order to draw down insufficient salary, but why bother me or little Johnny because of job requirements of Health Inspector?" "Proceed to forget advice contained in anemic note communication and apply money saved on next car payment or new loud speaker!"

Extreme perplexity is now experienced in minds of Hon. Parents who naturally indulge decided leanings toward erroneous statements

made by Family Dentist who knows better but talks worse because of financial loss nearly always resulting from handling children's teeth in busy Gen. Practice.

Conditions as recited are occurring frequently, Mr. Editor, and unfortunate by-product of such broadcasting by Dental Profession is to cast discredit and suspicion on trustworthy and competent School Health Officers who are doing best possible services to unfortunate children by discovering hitherto unsuspected physical defects and suggesting that suitable remedies be applied at earliest possible moment.

Truth of statements of Family Dentist that deciduous teeth will be lost anyhow in few years of elapsed time cannot be questioned, but if said teeth are in condition causing pain when put to proper serviceable use, malnutrition and other distressing childhood etc. are almost sure to result. Growing child requires perhaps 2½ times amount of energy producing and nourishing food in proportion to body weight that is proper for adult of ordinary horse power. With poor teeth for chewing purposes present in mouth unfortunate little sufferer is forced to consume excessive amounts of sugar, candy, and other deleterious substances to supply craving for energy and thus vicious circle is established which still further destroys diseased and vanishing teeth.

Distressing fact that children are in some cases handled only at financial loss to dentist who does said handling has several angles some of which may have escaped intelligent notice. Discouraging and unprofitable child patient of today becomes in many cases highly intelligent and influential citizen in astonishingly brief period of elapsed time. Dentist who stood by and became identified in childish mind with sensation of relief from toothache occupies unshakable position at head of profession in adult brains when fully developed. *Success in any line, in order to be permanent, must be continuous!* and nothing is of greater value to any professional man than constantly ripening procession of young adults who are entirely unaware of existence of any other practitioner except one who gained childish confidence in baby days of recent yesterday.

Rewards of professional effort are not measured exclusively in terms of cold cash or cold turkey—though these desirable substances are usually forthcoming in sufficient quantities as years go by—but are to be reckoned also in the imponderables of self-esteem, proper self-respect and somewhat exalted and noteworthy Community and Professional Standing.

Hoping you are the same,

Yours considerably,

Togo.

New York Urges Dental Care for Its School Children

ORAL HYGIENE COMMITTEE
OF
GREATER NEW YORK

February 4, 1928.

To the Editor:

We have received an official communication from the Department of Physical Training of the Board of Education of the City of New York informing us of their further efforts to "establish the health habit of an annual visit to a dentist," which work is supported by the City Superintendent of Schools. Our committee feels that this very laudable step deserves the attention of the entire profession and should act as a stimulus to all of those interested in promoting mouth hygiene as an important factor in health preservation for children.

Enclosed you will find several forms used by the school authorities in order to carry out their plan, part or all of which you may care to publish.

Respectfully submitted by

(Signed) JOSEPH H. KAUFFMANN, *Secretary and Treasurer, Oral Hygiene Committee of Greater New York,*
110 East 54th Street, New York.

MAURICE WILLIAM, *Chairman.*

BOARD OF EDUCATION
THE CITY OF NEW YORK
OFFICE OF
THE DIRECTOR OF HEALTH EDUCATION
157 EAST 67TH STREET

To the Members of the Dental Profession of the City of New York.

Gentlemen:

The Board of Education of the City of New York is anxious to continue its efforts to establish in school children the habit of making an annual visit to a dentist for the purpose of prophylactic surface-cleaning and repair work.

To this end, following our usual procedure, we have sent a letter of instruction, as set forth in the enclosed circular, to the principals of every elementary and junior high school in the city.

We know you recognize the great importance of the health habit of an annual visit to a dentist, and that you will continue to cooperate whole-heartedly with us, by supplying the necessary prophylactic and reparative treatment and by giving instruction in the use of the toothbrush and in the care of the mouth and teeth.

You will notice that this year we have revised the Dentist's Certificate in the following ways:

(1) We are asking you to indicate the work needed:
   (*a*) Prophylactic cleaning.....Yes.....No.
   (*b*) Fillings—how many?.....
   (*c*) Extractions—how many?.....

(2) We are asking you to make a statement as to when you expect to complete the work.

The affixing of your signature to the Dentist's Certificate is a very important step in this plan and will testify that the pupil is under your care.

This plan has received endorsement of the Oral Hygiene Committee of Greater New York and of the Department of Health.

Very truly yours,

(Signed) A. P. Way, M.D.,
Acting Director of Health Education.

Approved:
(Signed) William J. O'Shea,
Superintendent of Schools.

Approved:
(Signed) Joseph M. Sheehan,
Associate Superintendent.

Board of Education—The City of New York

General Circular No. 17, 1927-28.
Item V: Establishing the Health Habit of an Annual Visit to a Dentist.

To the District Superintendents and Principals.

Ladies and Gentlemen:

One of the most important health habits that teachers can help to establish in their pupils is the habit of making an annual visit to a dentist for the purpose of prophylactic surface-cleaning and repair work. To this end, will you please instruct your teachers to encourage their pupils to make this visit to the dentist, either to the family dentist or to a dentist in a clinic, as early as possible, so that the cleaning and reparative work may be accomplished before the end of the term. Chil-

dren are to be encouraged to return to their teachers, certificates signed by the dentist stating that the pupil is under dental care.

You will notice that this year we have revised the Dentist's Certificate in order to make it possible for the teachers to follow up the dental defects more efficiently. To this end we are asking the dentists to indicate:

(1) Prophylactic cleaning.....Yes.....No.
(2) Fillings—how many?.....
(3) Extractions—how many?.....
(4) Work expected to be completed by.....
DATE

Through the dental journals and bulletins the dental profession of the City of New York will be notified by the Oral Hygiene Committee of Greater New York of this effort on the part of the Board of Education to "Establish the Health Habit of an Annual Visit to a Dentist."

Only those children should be sent to a dental dispensary who cannot afford to consult their family dentist.

A sample form of the *Dentist's Certificate* is given herewith. May I suggest that, unless you are already supplied with the printed form, you mimeograph, as you have done previously, a supply adequate for the pupils in your school, as per form below.

The class which shows the largest percentage of certificates returned bearing the dentist's signature might be especially commended.

Very truly yours,

(Signed) WILLIAM J. O'SHEA,
Superintendent of Schools.

BOARD OF EDUCATION
THE CITY OF NEW YORK

P. S.....BOROUGH.....CLASS.....DATE.....

To the Parents of.....

Every person should consult a dentist at least once a year to insure preservation of his teeth.

Will you please take your child to a dentist for advice in dental hygiene, and treatment if necessary?

(Signed).....
PRINCIPAL.

DENTIST'S CERTIFICATE FOR THE
BOARD OF EDUCATION
THE CITY OF NEW YORK

DATE.....

To the Principal of P. S.....Borough.....

This is to certify that.....
Class.....is under my dental care, which is to include surface-cleaning and reparative work if necessary. He has received instruction in the use of the toothbrush and in the care of the mouth and teeth.

WORK NEEDED:

(1) Prophylactic cleaning.....Yes.....No.
(2) Fillings—how many?.....
(3) Extractions—how many?.....

I expect to complete work by.....
DATE

.....D.D.S.

ADDRESS.....

American Dental Association

Minneapolis, Minnesota—August 20-24, 1928

HOTEL RESERVATIONS

The Housing Committee for the American Dental Association meeting in Minneapolis has compiled a roster of hotels approved by the Minneapolis Civic and Commerce Association and the Hotel Association.

Please be accurate in filling out the reservation form below and send it to the hotel of your first choice. You will be advised by the hotel of the receipt and listing of your reservation.

		WITH BATH		WITHOUT BATH	
HOTEL	Rooms	One Person	Two Persons	One Person	Two Persons
Radisson, 7th, bet. Hennepin & Nicollet	500	$3.00–6.50	$5.00–30.00	$2.00–2.75	$4.00
Nicollet, Washington at Nicollet....	600	2.50–6.00	4.00– 8.00	2.00	3.50
Curtis, 10th St. and 4th Ave. S....	825	2.00–3.00	3.00– 6.00		
Leamington, 3rd Ave. S. at 10th St.	500	2.50–4.50	3.50– 6.00		
Sheridan, 1112 Marquette Ave.....	450	2.50 up	3.50 up	1.50 up	2.50 up
Andrews, Hennepin and 5th.....	328	2.50–6.00	4.00– 7.00	2.00–2.50	3.00–3.50
Buckingham, LaSalle and 15th.....	138	2.50–3.50	4.00– 6.00		
Camfield, Marquette and 8th.....	100	1.50–1.75	2.50	1.25	2.00
Dyckman, 6th, bet. Hennepin & Nicollet	300	2.00–5.00	4.00– 7.00		
Francis Drake, 10th St. & 5th Ave. S.	160	2.50–5.00	3.50– 6.00		
Elgin, Hennepin and 8th.....	125	1.50	3.00 up	1.00	2.00 up
Hastings, 12th and Hawthorne.....	150	1.75–4.00	2.50– 5.00		
Maryland, LaSalle and Grant.....	172	2.00–2.50	3.00– 3.50		
Plaza, Hennepin and Kenwood Pkwy.	160	2.50–6.00	3.50– 6.00		
Pauly, Nicollet and High.....	48			1.00–1.50	1.50–2.00
Rogers, Nicollet and 4th.....	200	2.00–2.50	3.50– 5.00	1.25–1.50	2.50
Russell, 16 S. 4th St.....	125	1.50–2.50	2.50– 4.00	1.25–1.50	2.00–3.00
Senator, 314 S. 8th St.....	80	2.00 up	3.00 up		
St. Regis, Marquette and 9th.....	58	1.50–3.00	2.50– 4.00		
Vendome, 4th bet. Hennepin & Nicollet	250	1.75	3.00– 3.50	1.25–1.50	2.00–2.50
West, Hennepin and 5th.....	362	2.00–4.00	3.00– 5.00	1.50–2.00	2.50–3.00

MAIL THIS APPLICATION DIRECT TO HOTEL

HOTEL RESERVATION

AMERICAN DENTAL ASSOCIATION, MINNEAPOLIS, MINNESOTA. AUGUST 20-24, 1928.

..... Hotel.
Minneapolis, Minnesota.

Gentlemen: Please make reservations noted below:

.....room(s) with bath for.....persons. Rate: $.....to $.....per day per room.

.....room(s) without bath for.....persons. Rate: $.....to $.....per day per room.

Date of arrival.....Hour.....

Date of leaving.....

Please note the following second and third choice of hotels:

Second choice .....

Third choice .....

In the event that the reservation of your first choice cannot be made, the hotel manager will forward notice to the Chairman of the Halls and Hotels Committee. He will place your reservation under either your second or your third choice, or, if these are not available, in as favorable a hotel as possible. You will be advised of the name and location of the hotel in which the reservation is made and the hour at which the reservation begins. Rooms not occupied at the designated hour of the reservation may be reassigned by the hotel.

Please remember that a reservation constitutes a contract with the hotel to provide you with the accommodations you desire. If you find it impossible to carry out your part of the contract, namely, to occupy the room at the time agreed upon, please write or wire the hotel releasing it, in order that your room may be made available for other members.

Important Announcement

THE MORRIS L. CHAIM AND THE BENJAMIN LORD PRIZE FOR 1927

Extension of Time for the Submission of Papers

The First District Dental Society of the State of New York announces a prize of $250.00 offered by the Morris L. Chaim Fund and a prize of $150.00 offered by the Benjamin J. Lord Fund, to be known as the Morris L. Chaim Prize and the Benjamin Lord Prize respectively. These prizes are to be awarded annually at the discretion of the Board of Directors.

Conditions

1. *Eligibility.* Membership in good standing of any bona fide dental, medical, or scientific society, or duly registered student of a recognized educational institution, prior to submission of the manuscript.

2. *Date.* Papers are to be submitted on or prior to June 1, 1928, to the Secretary of the First District Dental Society, 2 East 103rd Street, New York.

3. *Papers.*

A. The Morris L. Chaim Prize is offered for the most acceptable paper in the field of science and art as related to dentistry, which paper embodies the results of original research not previously published.

B. The Benjamin Lord Prize is offered for the most acceptable paper in the field of clinical dentistry having an immediate and direct value in its application to practical needs, which paper embodies the results of original research not previously published.

The manuscript shall be typewritten and accompanied by all necessary photographs, drawings, diagrams and tables and shall be ready for publication.

The manuscript and all drawings, diagrams, photographs, tables, data, etc., shall be sealed in a plain wrapper or envelope, which shall bear on the outside some symbol, group of letters, figures or other identification mark, and, accompanying each such sealed packet or envelope, another sealed envelope having on the outside a duplicate of such symbol, group of letters, figures or other mark, and within this sealed envelope shall be placed the name and address of the person submitting the manuscript, etc.

4. *Award.* The award shall be made by the Board of Directors of the First District Dental Society of the State of New York. At the discretion of the Board the prizes may be divided between the papers adjudged to be of equal merit, or both prizes awarded for one paper, if in the opinion of the judges it merits them.

5. *Publication.* The First District Dental Society of the State of New York will consider the publication of the successful papers, but publication by the First District Dental Society of the State of New York shall not be binding on either party.

6. Wherever and whenever published, the papers awarded the prizes shall be accompanied by the statement: "Awarded the Morris L. Chaim or the Benjamin Lord Prize, or both, in 1927, by the First District Dental Society of the State of New York."

Further information may be had by addressing E. M. Davies, General Secretary, First District Dental Society, New York Academy of Medicine, 2 East 103rd Street, New York, N. Y.

Death of Dr. Brophy

Word has been received of the death on February 4, 1928, of Dr. Truman W. Brophy at the age of eighty. He was graduated from the Pennsylvania College of Dental Surgery in 1872 and from Rush Medical College in 1880. He was noted for his cleft palate operation, and his book on oral surgery is standard. His death will be an inestimable loss to the profession.

DIGESTS

SAFEGUARDING THE DENTIST'S INTERESTS FROM THE LEGAL STANDPOINT

By Hugh D. Combs, Esq.

In recent years it has become less difficult for plaintiffs to secure expert testimony in their behalf. Dentists seem more willing to answer "hypothetical" questions in a manner detrimental to the defendant. However, very few cases come to trial, and the verdicts range from $500 in the municipal courts to $15,000 in the Supreme Court.

A broken needle is an accident that may happen to any one. The big mistake is the failure of the dentist to tell the patient at once what has happened and to institute proceedings to have the piece removed.

In cases of teeth broken in extraction, where the roots are left in the jaw, the patient has no basis for action if he has been informed of the fact at the time and has been referred to a specialist for their removal.

The law requires that a dentist have the ordinary skill and knowledge possessed by the other dentists in the same locality. If a tooth is extracted and its removal does not benefit the patient to the degree expected, the dentist cannot be blamed. However, the unintentional removal of the wrong tooth has often resulted in heavy damages against the dentist.

The requirements that the plaintiffs file a bond to cover the costs would greatly eliminate the volume of litigation. Every dentist should carry liability insurance. And, finally, the dentist should impress the patient that she is receiving his individual attention while she is in the chair. If anything happens, the patient should be told at once and, if necessary, some other man should be called in as consultant. Above all, the office should be kept clean.

Disputes over bills are a common cause for malpractice suits. A man receives a statement that is a great deal larger than he anticipated, and he refuses to pay it. The bill is turned over to a collection agency and eventually a suit for collection is started. The only defense to this is a countersuit for malpractice, and instead of being willing to settle for half the amount of the bill the dentist finds himself in the position where he is expected to pay out a much greater amount.

If the dentist is called into court, he should take a great deal of

care in his personal appearance. He must look like a good dentist or the jury will be influenced against him. He must not talk too much or too little. But if he has used his best judgment and ordinary sound business sense in the conduct of his office, the dentist need have little fear from malpractice suits.—*The Journal of Dental Research,* December, 1927.

THE ETIOLOGY, PATHOLOGY AND TREATMENT OF SO-CALLED "DRY SOCKETS"

By Lester Richard Cahn, D.D.S.

Dry socket is not an infrequent occurrence, though very little can be found in dental literature concerning its etiology. Local anesthesia cannot be blamed for all the cases, since some occur after the use of nitrous oxid. The definition of dry socket is *an alveolitis, or osteitis of the socket, due to a low-grade infection.* It must be differentiated from postoperative trauma, and it most frequently occurs after the extraction of old roots that are *x-ray negative,* and especially if an elevator is used.

In the majority of cases the disease is localized, but occasionally an extreme osteomyelitis follows. In mild infection granulation will start soon and the socket will heal, but if the bacteria are more virulent, then death of the bone occurs and sequestra are formed.

Immediate curettage of the socket is contra-indicated. Antiseptic remedies should be tried first. The socket is flooded with normal saline solution, which is drawn off by an aspirator with as little pressure as possible. This is repeated until all the debris has been removed. A swab moistened in sterile water or alcohol is dipped in powdered sodium perborate, carried to the mouth of the socket and smeared over the adjacent teeth. This is used as a precaution against spirochetes.

The socket is isolated with cotton rolls, and a few drops of methylene blue are placed in it. The socket is then lightly packed with mercurochrome gauze. For home treatment a warm alkaline wash is advised, such as a teaspoonful of bicarbonate of soda in a half glass of water. This treatment is repeated every day, and if the pain is still present after three or four days, curettage is resorted to. No anesthesia is used, for gentleness is essential.

To prevent dry socket is sometimes easier than to cure it. When extracting, the field of operation should be as clean as possible. Periodontal suppuration, if present, should be treated first. The tooth to be extracted and its neighbors are vigorously scrubbed with sodium perborate powder, which is allowed to stay on for five minutes. The

mouth is then rinsed. Finally, the field is painted with 95% alcohol. Unless the operation is urgent, no tooth should be extracted from a patient recovering from a "head cold." The elevator is used as little as possible and roots are removed by laying back a flap and cutting away enough of the outer alveolar plate to make delivery easy.—*Dental Items of Interest,* January, 1928.

THE MODERN FIXED BRIDGE: ITS CONSTRUCTION AND APPLICATION

By De Forest Davis, D.D.S.

In spite of much discussion and the development of various types of removable bridges the fixed bridge still continues in use and is held in esteem by many discriminating practitioners.

The following conditions are necessary for the success of fixed bridgework:

1. The occlusion must be favorable, and if it is not, then balanced occlusion must be obtained by grinding or opening the bite.
2. The abutment teeth should be prepared with the least possible destruction.
3. There must be no pathology connected with the abutment teeth.
4. Abutments and pontics must be in harmony with tooth anatomy.
5. There must be no strain on the abutments when the bridge goes to place.
6. The occlusion must be corrected perfectly after the bridge has been set.

The quality and quantity of the alveolar bone must be taken into consideration, and two abutments should not carry more than two pontics.

Any properly constructed fixed bridge can be kept as clean as the natural teeth.

Fixed bridges and removable bridges fail, and the fixation or motility of the abutments seems to be of little importance.

The three-quarter crown is ideal for an abutment, but with the use of hard golds a simple inlay is generally of sufficient strength. Porcelain-tipped pontics are best from the standpoint of cleanliness.—*The Dental Cosmos,* January, 1928.

BIOLOGIC DEFENSE IN INFECTION

By Palmer Findlay, M.D., F.A.C.S.

"1. Experimental and clinical evidence justifies the conclusion that focal infections in teeth and tonsils are prone to disseminate.

"2. Unwarranted enthusiasm and high-pressure salesmanship have led to needless sacrifices of teeth and surrounding structures.

"3. Nature has provided a biologic defense against infection which should be safeguarded and not destroyed by operative intervention.

"4. Alveolectomy breaks down nature's defense mechanism, and is therefore unsurgical as a rule of practice, though probably justified in exceptional cases where there is a widespread necrosis.

"5. Cases should be observed over a long period of time before a final conclusion as to results is arrived at. Control observations are a *sine qua non* in drawing conclusions.

6. The extraction of a devitalized tooth as a prophylactic measure is, in the absence of pus, unwarranted. In the light of our present understanding such teeth should be sacrificed only in the presence of lesions now alleged to be due to focal infections. It is to be hoped that, in the near future, even this indication for extraction will be superseded by more conservative means.

"Let me say in conclusion that if dental surgery is destined to pass through the successive stages that surgery in general has experienced, this *furor operativus* through which you are now passing will give way to a more rational and conservative attitude on the part of the dental surgeon. Discussions such as this can serve no better purpose than to speed the day when there will be a common understanding and a uniform practice."—*The Journal of the American Dental Association,* January, 1928.

THE RECEPTION AND MANAGEMENT OF NEW PATIENTS IN DENTAL PRACTICE

By William Dwight Tracy, D.D.S., F.A.C.D.

Many instances of disharmony, misunderstanding and dissatisfaction on the part of patients may be avoided by proper management. The three sources from which patients generally come are (1) satisfied patients already in the practice, (2) out-of-town practitioners who refer patients because they know the dentist personally or by reputation, (3) physicians or other dentists who may send patients for diagnosis, opinion or advice.

A thorough examination is first made, together with a complete x-ray summary and plaster models when necessary. Then the nature of the work is discussed with the patient and, if it is extensive, the probable expense and time to be consumed. It is easy to tell from the work found in the patient's mouth approximately the fees that have

been paid. When the work is manifestly of an inferior quality and must be replaced, then the situation must be handled with tact. It is easy to criticize, ridicule and condemn, but this may be unjust to the former dentist and is certainly a detriment to the profession as a whole. There is no necessity to commend or defend incompetent workmen, but if possible no discredit should be cast on a professional brother.

Some patients come dissatisfied with elaborate and expensive restorations. There is mental irritation, and an imagined grievance. The patient will try to force the dentist to make admissions that may serve as the basis of a lawsuit. An attempt should be made to smooth things over and to get the patient to return to the man who did the work. Failing this, it is better to advise the patient to go to some one else.

When patients are staying in the city for only a few months, no work of a permanent nature should be done for them. They can usually be kept comfortable by the use of gutta-percha and cement until they return to their own dentists.

When a patient is referred by a physician, a complete diagnosis and recommendations for treatment are sent to the physician. If you are requested to clear up the conditions, then the family dentist should be informed of the request and assurance given him that the patient will be returned to him when the treatment is completed.

A spirit of optimism should be maintained toward patients who are in serious dental trouble, but great care should be taken not to let them expect too much. In this way disappointment will be minimized and in many instances the patient will be well pleased with the results. —*The Journal of Dental Research,* December, 1927.

AN INTERESTING CASE OF SALIVARY CALCULI

By H. L. Brooks, M.D.

Mrs. E. P. R., aged 34, married, housewife, complained chiefly of swelling of the floor of the mouth, especially underneath the tongue. Mastication was painful at times, and there was slight pain radiating to the right ear.

As a child in school she remembered slightly a trouble of a minor nature underneath the tongue and also having expectorated small seed-like substances that seemed to exude from the under surface of the tongue.

Several years ago she had three lower teeth extracted and about four weeks later she noticed a swelling under the tongue on the right side.

It was painful and especially sensitive when she ate anything sour. This gradually subsided after she had worked a little stonelike substance from under the tongue, evidently a calculus.

Two years ago the swelling recurred and she consulted her family physician, who, after examining it, decided to puncture the swelling under the tongue. He got nothing on puncture and told her to return in a week. In the interval she removed with her finger a small calculus, and the swelling subsided. She had no further trouble until she consulted me ten days before the present report was written. She had a swelling underneath the tongue on the right side, tenderness beneath the jaw, and a radiating pain to the right ear. After examining it digitally, I had a roentgenogram made on a dental film and it revealed a pair of calculi.

Under local anesthesia I passed a probe into the lingual duct and felt a hard mass. I made an incision over the sublingual gland beginning at the duct orifice, exposed the stones and removed them. To date the patient has been comfortable. The swelling and induration have disappeared.—*The Journal of the American Medical Association,* January 28, 1928.

VINCENT'S INFECTION

By Mark Newgarden, D.D.S.

Summary and Conclusions

1. Vincent's disease includes Vincent's angina and Vincent's infection. Both present the bacillus fusiformis and the Spirochete of Vincent, the first mentioned disease being restricted to lesions of the throat and tonsils, the latter presenting only in the oral cavity.

2. Both microorganisms are always present in these cases. They are anaerobic, gram negative, and take the ordinary stains. The French writers accept the presence of both organisms as a peculiar "symbiosis." Others claim they are morphologic variants of the same germ. The disagreement is due to the difficulty in making successful pure cultures.

3. Vincent's infection must be differentiated from gingivitis, syphilis, tuberculosis, gonorrheal infection and pyorrhea alveolaris.

4. The disease is both contagious and infectious.

5. Vincent's infection appears as a gray ulcerative area at the gum festoons of the incisor or molar teeth, or both, on the inner surface of the cheek, usually near the orifice of the parotid duct in the mucobuccal fold adjacent to the lower molars. It may appear also on the

hard or soft palate or on the tongue. The gray surface is easily removed to reveal an ulcerated hemorrhagic area.

6. Early diagnosis is important and grave complications may result from neglect. The prognosis is good if detected at an early stage.

7. The microorganism may be the primary cause of the disease, as some believe, or secondary to systemic or oral conditions causing lowered resistance or favoring the growth of these organisms, such as:

a. A general infection.
b. Pericoronal infection (usually accompanying an erupting third molar).
c. Chronic irritation of the mucosa.
d. Unclean mouth.

8. The infection may be (*a*) potential, (*b*) subacute, or (*c*) acute. The potential Vincent's infection may become a subacute or acute infection by a lowered resistance, or through uncleanliness favoring the growth of the microorganisms already present. By neglect the subacute type may become acute also and result in much discomfort to the patient, in some cases even terminating fatally, being complicated by more severe disturbances.

9. The treatment varies, subacute infections generally responding to local applications (potassium dichromate being especially effective in these cases) and home treatment. Many cases have been cured by the removal of the cause of irritation where, by so doing, the surgical interference may not be considered enough to spread the infection. The more acute type is generally treated by injecting neosalvarsan and, more recently, sulpharsphenamine intravenously. Good results have been obtained by so doing.

10. Cleanliness, care, abstinence from alcoholic beverages, tobacco and condiments are essential during the course of the infection.—*Dental Items of Interest,* January, 1928.

PRACTICAL HINTS

This Department is now being conducted from the office of The Dental Digest. To avoid unnecessary delay, Hints, Questions and Answers should be addressed to Editor Practical Hints, The Dental Digest, 220 West 42d Street, New York, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

BURNING SENSATION.—I should like to offer an experience of my own to help your queryist "H. H."

I have personally suffered exactly as your correspondent's patient has, viz., hot burning sensation in the tongue, etc. I consulted an eminent specialist, who immediately diagnosed the cause as grit in the submaxillary gland. When this grit is eliminated, the burning sensation disappears and everything remains normal until further collection causes the return of the condition.

Lately I was consulted by an elderly male patient, who complained, as H. H.'s patient does, about his plate and burning tongue, etc. Well, knowing what cured me, I examined his maxillary gland and found the orifice blocked with a large stone, which I removed with happy results and to the delight and cure of the patient's trouble.

I hope that my experience will be of benefit to H. H. and any other readers of your excellent paper.

J. L. RIDINGS.

CAST CROWNS.—I notice that some correspondents are having difficulty with cast occlusal crowns. I have this suggestion, which has worked out very well for me after having the same experience.

Fit the band. Have patient bite in the wax in different positions. Remove carefully and fill the inside of the band with inlay investment. Leave enough excess for a handle. When investment is set, it will assume the position in the crown that the stump of the tooth originally had. Now carve the occlusal surface according to the bite indications. Cut off handle and invest the crown and all as an inlay and cast. Then

tack it on with solder, and all of the difficulties he mentioned will have been overcome.

P. H. Sheridan.

Novocain Dermatitis.—In the Dental Digest I noticed an inquiry from V. H. J. regarding a remedy for novocain dermatitis. As I have been troubled with it and know the distressing condition it is, I would suggest a prescription to heal up the condition, and then when the condition is relieved, instead of wearing rubber gloves when using novocain, simply rub the hands well with cocoa butter which is used for coating silicate fillings, which can be washed off immediately after the injections have been made.

The formula is:—

Zinc Oxide .....20 grains Acid Salicylic .....20 grains Glycerite Starch .... 2 ounces	Rub on hands after every time they are washed and at bedtime

G. H. McKeown.

Editor, Practical Hints:

I have a patient, a young girl aged 16, who weighed 140 pounds about a year ago. About a year ago she had her lower right second molar treated for root-canal work. However, about four months ago this tooth was extracted. During the time that this tooth was treated she was losing weight, and more so after the tooth was extracted. She now weighs about 100 pounds.

However, she still complains of pains about this area. It is a drawing pain, and not steady. It affects her right ear and eye a little. But when the pain is on, if she should start to eat, the pain leaves her during the process of mastication. The pain lasts for an average of about ten minutes. She complains also of a drawing sensation about the right side of the face.

I have x-rayed this area, and it shows no pathological condition. This tooth was a rather difficult extraction, and as I understand, the dentists had to use elevators and surgical chisels to remove it from the socket. What can this be?

C. W.

Answer.—You are certainly up against a difficult proposition. From the symptoms it would seem that there was an irritation of the fifth nerve. This may be in either the lower or the upper jaw on the affected side. From the fact that the pain is eased by pressure, I should suspect

a putrescent pulp and a slight pericementitis. The pulp in only one root of a molar may have died.

The first thing to do is to have complete x-rays of the upper and lower teeth on the right side. They should be examined carefully for pockets, deep caries, pulp stones, impactions, and any change in the peridental membrane.

I doubt very much if the oral condition has anything to do with her loss in weight, and for this she should consult a physician.

Editor, Practical Hints:

Kindly advise me as to what I can do to stop the formation of black rims around the teeth of a patient of mine, a young girl who does not smoke.

A. L. R.

ANSWER.—The formation of the black stain on the teeth of your patient is probably due to a disturbance in metabolism. Without knowing the particulars of her diet, the following general rules may be given:

Cut down the total amount of food taken and reduce the amount of meat. Eat more green vegetables and plenty of fruit, oranges being particularly suitable.

This of course, will not have an immediate result, and the teeth should be cleaned as often as is necessary.

Editor, Practical Hints:

I have had some difficulty in the treatment of Vincent's. I have used chromic and boracic acid mouthwash and numerous others. The patient has had neo-salvarsan, with little improvement. At times it clears up but returns in a few days.

Can you suggest a treatment? Also, what treatment would follow if the patient has syphilis?

L. R.

ANSWER.—Dr. Bloodgood of Baltimore reports splendid results in the treatment of Vincent's angina by the use of sodium perborate. A thick paste of the chemically pure salt is made with water and spread over all the teeth with the fingers. If there are any red or ulcerated areas in spots not around the teeth, they should be treated in the same way. The patient holds this paste in the mouth for about five minutes. During this time it foams as a result of oxidation. Then the mouth should be rinsed with warm water. This treatment should be carried out by the dentist every day for a week if necessary. Too frequent treatment produces irritation.

If the patient has syphilis, I presume that he is under treatment by his physician, and I do not see why the angina would be aggravated by this condition.

Editor, Practical Hints:

I have a patient who has had plates for 28 years. The first of the year she had new plates and since then complains of a tired feeling along both sides of the lower jaw (bicuspid area) and cannot keep them in her mouth longer than an hour at a time. They seem to fit perfectly and articulate properly. She has relief by raising the plate a little from the process.

Her first plates did not fit very well and she did not have the tired feeling along the jaw. Any suggestions will surely be appreciated.

A. D. M.

ANSWER.—During the twenty-eight years that your patient has worn plates there has probably been a great deal of resorption of the alveolar process, with the result that the nerve endings in the region of the mental foramina are fairly close to the surface. You say her old plate did not fit, and it was for this reason that there was no discomfort, since it did not bring pressure to bear on these areas.

If you will relieve these areas on the new plate I think you will find that she will be able to wear it without any further trouble.

Editor, Practical Hints:

I have been treating or attempting to treat a patient, a young man 23 years of age, for pyorrhea. He has such a terrible flow of thick saliva that it is next to impossible to treat the pockets. If you can give me any suggestion as how to control his saliva, I shall greatly appreciate the information.

R. C. M.

ANSWER.—Many cases of excessive saliva may be controlled by blocking off with cotton rolls and napkins Stenson's ducts on both sides and the sublingual glands, and by the use of a saliva ejector. If this fails, the use of atropin sulphate is indicated. The average dose is 1/160 gr. One dose is taken the evening before and the second on the morning of the appointment. This will check the saliva in a most efficient manner.

Editor, Practical Hints:

If possible will you please explain how to duplicate a plate.

E. J. H.

ANSWER.—There are several methods of duplicating plates, and the following is a very good one:

Take an impression of the mouth and pour a model. Mount this model on an articulator with the plate in position, and for the opposing side use wax or modeling compound in which is registered the plate bite. In this manner the relationship of the two jaws is maintained.

The teeth are then removed from the old plate and placed in the impressions. A baseplate is made and the case is waxed up and carried through in the ordinary manner.

Editor, Practical Hints:

What, in detail, is the best and, if they go together, the simplest method of bleaching an upper central whose pulp has been removed and the canal filled?

H. M. D.

ANSWER.—In bleaching teeth the first thing to do is to ascertain the cause of the discoloration, whether it is organic or metallic. In the majority of cases it will be found to be of an organic nature, and the best agent to use is a saturated solution of sodium dioxid.

The tooth to be treated is isolated by the rubber dam, great care being taken to see that it is tight. The tooth is opened and the sodium dioxid applied on asbestos fiber. When the dentin has been thoroughly saturated, 10% sulphuric acid is applied, which neutralizes the alkali and forces out the contents of the dentinal tubuli. The tooth is then washed thoroughly with hot distilled water. The application of the dioxid may be repeated, omitting the treatment with acid but washing with hot water. Metal instruments should not be used in applying the bleaching agent.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Elsie Pierce, care of The Dental Digest, 220 West 42nd Street, New York City.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE, CARE THE DENTAL DIGEST, 220 WEST 42ND ST., NEW YORK. YOU MAY HELP A NUMBER OF GIRLS WHO ARE JUST BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. OR IF YOU NEED HELP NOW WRITE TO ELSIE PIERCE—SHE'LL HELP YOU.

Dear Miss Pierce:

I am in an office where we do a great deal of x-ray work. It is my duty to take the pictures whenever the doctor is busy; also to develop, mount and file the films. I have never had any instruction in any part of this work excepting from the doctor, and I know that were it possible for me to take a course in the work, it would help me very much to perfect my knowledge, but unfortunately we are in a small town with no such facilities available, so I am turning to you for help to solve some of the problems I have met in this phase of my work.

(1) I find that little white spots appear on some of the films, sometimes, unfortunately, in the area that is most important for the doctor's diagnosis. What causes these spots? Are they due to faulty coating of the film or to something that I do or do not do in the developing and fixing?

(2) Sometimes the films stick together, and when I take them out of the fixing solution they are marred by light streaks. How can I prevent this condition?

(3) Once in a while a scum appears on the film after drying. What causes this, and how can I help it?

What can I do to prevent films being blurred as if the patient had moved his head while I was taking the picture?

I will appreciate your giving me as much information as possible about these questions and any other information you may think I need. I am a faithful reader of the *Questionnaire,* and I find it most helpful. It is the one thing that I look for each month that comes to the office, and the doctor seems as much interested in it as I am.

M. P., Okla.

ANSWER.—To answer your first question about the little white spots on the films, these are no doubt due to air bubbles forming on the films when first placed in the developing solution. To overcome these, if you develop in a tray, move the films about for a few seconds following your placing them in the solution. If you use a tank, move the rack of films up and down in the solution for a few seconds. I think you will find this will solve that particular trouble.

Regarding the films sticking together and causing light streaks—if you use the tray method of developing, be sure that the shiny side of the film is placed downward next to the tray and the dull side upward. If the dull side is placed next to the tray, it will often stick to it, causing the trouble you mention. Also, be certain that at no time are the dull sides of films allowed to come together, either in a tray or when placing films in a rack for developing in a tank. If you are developing a number of films, they should be moved about in the tray so as to allow the solution to reach every part of the film; this should be done with the fixing bath also. I am sure that procedure along this line will obviate those whitish or brownish streaks that otherwise mar a good film.

As to the scum which appears on a film when dry—I believe this is caused by sediment in the solutions or water used for washing. If your solutions or water is not perfectly clear, sponge off the films with a wet piece of cotton before putting them up to dry.

The fogging or blurring of films is more often due to the film having moved in the mouth than because of the patient's moving his head. Expert x-ray technicians advocate the use of bite blocks to help overcome this difficulty. There are various types of bite blocks on the market.

You do not say whether the machine in your office is one of the new models or of the old type. Of whatever type it should be kept scrupulously clean and no dirt or dust should be allowed to accumulate on the tube or inside of the leaded glass bowl protecting the tube. Sateen or muslin covers can be made at little expense to keep the tube covered, and this helps very much towards keeping out dust and dirt. Be sure that the solutions are fresh and clean and kept in well covered containers; also that they are not kept in a warm place, as warm solutions will soften the film coating and ruin the pictures. A temperature of from 60° to 65° F. is best.

May I suggest that you secure literature on the subject of x-rays from the angle in which you are particularly interested and devote some time to studying it carefully? A letter to the manufacturer of the machine in your office should result in their letting you know where to get this reading matter, and by whom it is written.

Dear Miss Pierce:

Please tell me something about the care and sterilization of hypodermic syringes and needles. I am new in the work, and the doctor seems to be too busy for me to ask him about it. To tell the truth, I hate to ask him a lot of questions.

J. L., New York.

ANSWER.—I am taking it for granted that the doctor uses the type of syringes that are boilable and platinum needles. For the most effective results syringes and needles should not be sterilized in the same sterilizer with the other instruments. One of the small sterilizers made for this purpose should be used, and in it place distilled water, to which a bit of white vaseline the size of a pea is added. In this boil the syringe and needle from five to ten minutes and allow to cool in the sterilizer to overcome brittleness of the glass. Remove with wooden forceps. Following sterilization, the needles can be placed in small test tubes, sealed with cotton (sterile) until needed, when they can be immersed in a phenol solution.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

On January 10, 1928, the regular meeting of the Educational and Efficiency Society for Dental Assistants, New York, was held at the Academy of Medicine, New York. Dr. Arthur Merritt, President of the American Academy of Dentistry, gave a very interesting and instructive talk on *Hygiene of the Mouth.* Dr. Henry Fowler, Honorary Member of the Society, spoke a few words of praise and encouragement for the members. Juliette A. Southard, Founder and Past President, spoke of the steps being taken in the education of dental assistants, telling of the courses given in Canada and of the establishment of a department for the training of the dental assistant at the School of Dentistry, Medical College of Virginia.

At the February meeting of the Clinic Club the subject of the evening was *Gas Anesthesia and the Duties of the Dental Assistant in Relation to It.* Plans are being made for clinics to be presented before the Dental Society of the State of New York at Syracuse in May. The

next meeting of the Clinic Club will take place on March 19, 1928. The Acting Director is Martha Hall, 221 Autumn Avenue, Brooklyn, N. Y.

The class in Laboratory Assistance continues its sessions on Thursday evenings, including in its studies the pouring and separating of models, articulation of teeth, and gold inlay casting. Groups are being formed for instruction in other phases of dental assisting. Agnes F. MacNeil, Chairman, may be reached at 113 South Elliott Place, Brooklyn, N. Y.

The Annual Dinner will be held on Saturday evening, April 28, 1928. Details will be given later.

The regular meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, will be held on Tuesday, March 13, 1928, at 8:00 p. m., at the Academy of Medicine, 2 East 103rd Street, New York. An interesting program has been arranged, including among the speakers a member of the dental profession and a noted clubwoman. A cordial welcome is extended to the members of the dental profession and to their assistants.

Montreal Dental Assistants Association

The monthly meeting of the Montreal Dental Assistants Association was held on January 18, 1928, in the Dental Department of McGill University. Following the regular order of business, Dr. F. H. A. Baxter, Professor of Operative Dentistry, McGill University, spoke on *The Problem of the Infected Pulpless Teeth and Their Treatment by Ionization.* The essayist pointed out some of the results of the neglect of diseased teeth and the problem of deciding what teeth it is advisable to save, the technic of ionization was thoroughly gone into, and a series of very interesting slides of practical cases was shown. Dr. George S. Cameron, Professor of Prosthetic Dentistry, McGill University, and Dr. J. S. Dohan, Associate Professor of Prosthetics, assisted Dr. Baxter with the slides.

Resolution

PRESENTED TO THE HOUSE OF DELEGATES OF THE AMERICAN DENTAL ASSISTANTS ASSOCIATION

Whereas, It has come to the attention of the Board of Trustees of the American Dental Assistants Association that accusation has been made that the organization of the American Dental Assistants Associa-

tion was only a preliminary step toward the labor unionizing of dental assistants and the ultimate control of salaries and hours of labor; and

Whereas, This same accusation has been made against the local and state dental assistants' societies that comprise its constituent membership; therefore be it

Resolved, That the American Dental Assistants Association in convention assembled, at Detroit, October 26, 1927, go on record as to the following:

(1) That there is not a word of truth in the foregoing accusation.

(2) That the American Dental Assistants Association is a professional organization of women employed in a particular field of human service, the practice of dentistry.

(3) That the Association is endeavoring to carry on educational work among its members, for the purpose of aiding its members to render better service to the dental profession.

(4) That it is trying to provide training for its members that will prepare them for any emergency arising in this service.

(5) That its sole object is to aid its members in every way possible to assist the dentist in rendering the highest possible service to humanity. Be it further

Resolved, That the foregoing be made not only a part of the records of this meeting and of the American Dental Assistants Association, but that a copy be sent to each dental magazine for publication and to any other person or persons as may be deemed advisable.

Signed by BOARD OF TRUSTEES.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

Show a little kindness
As you travel on through life;
If you're in a crowded street car
Give your seat up to your wife.

"You have one of the finest mint patches in the country."

"It's like one of them there ancient pyramids" answered Uncle Bill Bottletop. 'Kind o' interestin'—but what good is it?"

(Judge)—You broke into the house—but how did you manage to break the treble safety lock?

(Accused)—It would be no good my telling you—you would never manage it; it takes years of practice.

"We stand back of every auto we sell," says an ad. Fine! The front end is the dangerous end.

(Lady—to tramp)—Do you ever drink intoxicating liquors?

(Tramp)—Before I answer you, lady, I would like to know whether it's a question or an invitation.

Talking tires men, but doesn't women, a scientist tells us. The vocal cords of women are shorter than those of men and less energy is required to make them wiggle.

(Mother)—Son, why are you wearing your glasses in bed?

(Son)—I'm getting so short-sighted that I can't recognize the people I dream about.

A little boy was told that when visitors came to the house it was his duty to pay them some attention.

Shortly afterward a Mrs. Daniel called, and the small boy shook hands with her politely and exclaimed in his best drawing-room manner:

"How do you do, Mrs. Daniel? I've just been reading about your husband in the den of lions."

(Judge)—Did the accused give you the impression of a drunken man on the night of the affair?

(Witness)—Yes; he was wearing a watch with an illuminated dial and was trying to light his cigar by it.

(Doctor — after examination)—Madam, you have a constitution of iron.

(Obese Patient)—I have often wondered what made me so heavy.

God and the Doctor we alike adore,
But only when in danger, not before;
The danger o'er, both are alike requited—
God is forgotten, and the Doctor slighted!

(Mrs.)—I won't be long, dear. I'll be ready in a minute.

(Mr.)—Well, for goodness' sake do pick out a minute that's not more than half-an-hour away.

"Wilson Peace Award Is Urged for Lindbergh." That's right. Why not give the boy something?

One thing at a time is enough for anybody, and as soon as we learn how to pronounce Hrdlika—the name of a great scientist—we will take up Skjellerup—the comet man.

If old man Methuselah had known something about vitamins, had his tonsils out, and used the right kind of tooth paste, there is no telling how long he might have lived.

There is in a private hospital in New York a young woman who has undergone an operation to have all trace of an appendicitis scar removed.

"What do you suppose is the idea?" asked a patient in a nearby room.

"How can any girl tell where this short skirt craze will end?" rejoined his visitor.

MARCH

Blustering March again is here,
Gruffest month of all the year.
He is surly, he is rough,
Yet, maybe, it's partly bluff,
And, indeed, I often wonder
If there doesn't, sometimes, under
All his bluster, lurk a smile,
For in but a little while
He will open wide the door,
Give a gracious, parting roar,
And April, full of tears and mirth,
Will enter, making glad the earth.
March may rant and roar and rage,
Not for long he'll hold the stage,
So, despite each crazy whim,
Cheerfully we'll bear with him.

FUTURE EVENTS

THE PROSTHODONTIA SECTION OF THE EASTERN DENTAL SOCIETY will hold its next meeting on March 12, 1928, at 8.30 P. M., at the Allied Dental Council Headquarters, 425 Lafayette Street, New York.

A most comprehensive exhibit on the engineering and construction of partial dentures will be shown with a view toward solving the many difficulties encountered.

Dr. H. H. Trattner will be the essayist of the evening.

The committee urges an early attendance, since interlinking detailed steps will be demonstrated.

LOUIS I. ABELSON, *Chairman,*
S. CHARLES GARDNER, *Secretary.*

THE WESTCHESTER DENTAL SOCIETY will hold its next scientific meeting on Tuesday, March 27, 1928, at 8.30 P. M., at the Yonkers (N. Y.) Chamber of Commerce.

The essayist will be J. K. Burgess, D.D.S., who will speak on *Attachments for Vital Posterior Teeth.*

D. Slutzkin, D.D.S., will present a table clinic on the McBoyle attachment, beginning promptly at eight o'clock.

All ethical practitioners are invited to attend.

THE ALABAMA DENTAL ASSOCIATION will hold its fifty-ninth annual meeting in Birmingham, April 10-12, 1928.

F. F. PERRY, *Secretary,*
712 Shepherd Building, Montgomery, Ala.

THE ST. LOUIS STUDY CLUB OF DENTISTRY, organized in 1919 for the purpose of teaching advanced dental knowledge to practising dentists, without charge, and in continuous operation since that time, has just completed its tenth annual session. The enrollment of 150 dentists for this term was the largest since the opening of the institution, which will have a clinic and dinner on Saturday, April 14, 1928, at the Gatesworth Hotel, 245 Union Boulevard, St. Louis, Mo.

The clinic, which will start promptly at two o'clock, will consist of the following subjects: Dental Ceramics, Fixed Bridgework, Full Dentures, Operative Dentistry, Rizadontia, Tooth Form and Cavity Preparation, Dental Roentgenology, Dental Prophylaxis, Conduction and Local Anesthesia, Dental Economics, Oral Diagnosis and Diseases of the Mouth.

Following the clinic a dinner will be given at 6.30 by the students as a tribute to the instructors. The guest of honor on this occasion, Major John C. Gotwals, Engineering Corps, U. S. A., will deliver a lecture, illustrated by movies, on *Alaska.*

A cordial invitation is extended to all the members of the profession to attend this clinic and dinner.

Bulletins descriptive of the Study Club may be had by addressing

DR. F. C. RODGERS,
309 Wall Building, St. Louis, Mo.

THE NEW JERSEY STATE DENTAL SOCIETY will hold its fifty-eighth annual meeting at the Berkeley-Carteret Hotel, Asbury Park, N. J., April 18-21, 1928.

Essays—Wednesday and Thursday; clinics—Wednesday, Thursday, Friday.

All members in good standing in the A. D. A. are invited to attend. Membership card must be shown to prove eligibility for admission to essays and clinics.

THE IOWA STATE DENTAL SOCIETY will hold its Sixty-sixth Annual Meeting in Des Moines, Iowa, May 1-3, 1928.

THE MASSACHUSETTS STATE DENTAL SOCIETY will hold its annual meeting at the Hotel Statler, Boston, Mass., May 7-11, 1928.

RICHARD H. NORTON, JR., *President,*
15 Bay State Road, Boston, Mass.
WILLIAM H. GILPATRIC, *Secretary,*
358 Commonwealth Avenue, Boston, Mass.

The 60th annual meeting of the DENTAL SOCIETY OF THE STATE OF NEW YORK will be held at the Hotel Syracuse, Syracuse, N. Y., May 16-18, 1928.

Literary exercises, clinics, exhibits, etc., will be held at the Hotel Syracuse. Dr. Daniel Jutton, 405 East Fayette Street, Syracuse, N. Y., is chairman of the Exhibits Committee. Dr. I. J. Silverman, 541 East Genesee Street, Syracuse, N. Y., is chairman of the Clinic Committee.

The Executive Council will convene for the transaction of the business of the Society on Tuesday, May 15, at 3.00 P. M.

Essayists

Edward C. Kirk, Philadelphia, Pa.
Chalmers J. Lyons, Ann Arbor, Mich.
William E. Harper, Chicago, Ill.
R. H. Volland, Iowa City, Iowa.
M. M. House, Whittier, Cal.
Edward Kennedy, New York, N. Y.

During the time of the meeting sessions of the New York State Dental Hygienists Association and the Dental Assistants Association will be held.

Headquarters will be at the Hotel Syracuse and reservations should be made direct with the hotel. For further information apply to Dr. A. P. Burkhart, Secretary, 57 East Genesee Street, Auburn, N. Y.

THE VERMONT STATE DENTAL SOCIETY will hold its 1928 meeting at Burlington, Vt., May 23-25, 1928.

THE VIRGINIA STATE DENTAL ASSOCIATION will hold its annual meeting in the Patrick Henry Hotel, Roanoke, Virginia, May 29-31, 1928.

THE INDIANA BOARD OF DENTAL EXAMINERS will meet at 8:00 A. M., June 18, 1928, at the State House, Indianapolis, Ind., in the House of Representatives room, for the purpose of examining all applicants with proper credentials. Applications should be in the hands of the Secretray one week before the Board meeting.

For applications, clinical requirements, and other information, address

J. M. HALE, *Secretary-Treasurer,*
Mt. Vernon, Ind.

THE NORTHEASTERN MASSACHUSETTS DENTAL SOCIETY will hold its fourteenth annual convention on June 25-27, 1928, at the New Ocean House, Swampscott, Mass. All ethical dentists are cordially invited to attend. Best of clinicians and exhibits, reduced hotel rates, golfing and surf bathing. For particulars, address

HENRY I. YALE, *Secretary,*
Peabody, Mass.

THE AMERICAN DENTAL ASSOCIATION will hold its Seventieth Annual Session in Minneapolis, Minnesota, August 20-24, 1928.

THE AMERICAN DENTAL ASSISTANTS ASSOCIATION will hold its fourth annual meeting in Minneapolis, Minn., August 21-23, 1928. General headquarters will be at the Leamington Hotel.

JULIETTE A. SOUTHARD, *President,*
174 West 96th St., New York, N. Y.
RUTH F. ROGERS, *Secretary,*
Suite 1760, 16 North Wabash Ave., Chicago, Ill.

The position of DENTAL INTERN at the LENOX HILL HOSPITAL, New York, will be vacant on September 1, 1928. The term of service is one year, with full maintenance. Applicants must be graduates of the current year. Apply in writing not later than April 15, 1928, to

GEORGE F. SAUER, *Superintendent,*
112 East 77th St., New York.